Robert West, interviewed by Ann McNeill
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AM: Would you please introduce yourself.

RW: I am Robert West, ex-Editor-in-Chief of the Journal Addiction and Professor Emeritus of Health Psychology at the University College London: with Emeritus meaning 'has-been' as opposed to 'extra good'!

AM: Not at all, it means very distinguished. OK and I'm Ann McNeill. I'm a Professor of Tobacco Addiction at King's College London. So tell me a little bit about your early life and then what led you to taking psychology at UCL.

RW: I was born in the Royal Naval Hospital at Haslar in Gosport on the South Coast of England in 1955. My grandfather had been in the navy. When I was two years old we moved to Ghana for a couple of years - Accra.

AM: So you probably don't remember much about it.

RW: I remember certain things, or at least I have images of certain things, one of which was a fight between our cook and the nanny. The cook was chasing the nanny around the garden with a hatchet! Fortunately it didn't come to anything. The other thing I remember is being stung by a jellyfish, which was quite painful …

AM: So then you came back.

RW: We had to come back because, so I learned from my mother, my father was caught having an affair with a tribal chief's daughter. So we had to come back … then he split up with my mum and ….

AM: Unsurprisingly.

RW: Unsurprisingly! And she took up with a New Zealander, who worked in electronics. My father went to live in Paris - so I would spend half my time between my father's in France, and then Spain and then back to France again at various points in my childhood. And the UK time would be spent with my mum, or at boarding school in Surrey.

AM: Wow, okay, I had no idea you had such an interesting childhood, hence the connection with Paris now, I guess.

RW: Yeah that's right, my stepmother Malu is French; she lives just outside Paris.

AM: So do you speak any other languages?

RW: Do I speak French?

AM: Yes.

RW: Un peu.

AM: So I want to fast forward a little bit to how you got to choose psychology at UCL.

RW: I started in medicine because my mum was a nurse and my brother was doing medicine - and because I wanted to be a jazz guitarist and medicine was supposed to be a good fallback. I got into St George's Hospital Medical School (1973) and at that time students did their pre-clinical either at UCL or at Kings College London, because they didn't have a pre-clinical course at St George's. I chose UCL because I'd been to a few rock concerts there and I liked the vibe. But, when I started to do medicine, two things became obvious: one is I had no interest in medicine and the other was that I wasn't going to be a jazz guitarist - at least not a successful one - not having the skill or the application.

AM: But you still play?

RW: I do and I probably, enjoy music a lot more than I would have if I had become a professional musician!

AM: So you never thought of maths, because maths and music go together?

RW: They do, but I wasn't good enough.

AM: I'm sure that's not true, Robert.

RW: Well actually I didn't try transferring to a maths degree, because to do medicine in those days, you did physics, chemistry and biology A-level, so I didn't have maths A-level. But also from the people I know who did maths, it looked very hard!

AM: Yes I do remember that from my A-level maths. So then you went to UCL to do your pre-clinical and that's when you changed your mind about medicine.

RW: Yes I did very little work … just enough to pass the exams. But in the process it became obvious that I needed to do something else. Most of my friends were either psychologists or philosophers, so it was a toss-up between the two and I chose psychology because I thought it would be good to do a subject that actually had some data and evidence, and not just sort of you know making stuff up, which is what philosophy is … (tongue in cheek).

AM: OK and did you enjoy it then when you switched to psychology (in 1974)?

RW: I did. To start with I didn't have any intention of doing any work, or just enough to get by, but I had a tutor, Peter Kelvin, a socialist psychologist, who seemed to

think I was quite good and it was very motivating. We had really good conversations. He was a super bright guy. I don't think he intentionally wanted to mentor people; it wasn't in his nature, but if you could argue and give him a good discussion, he really enjoyed that.

AM: Yep, it's amazing how many of us are shaped by either schoolteachers, or university lecturers, or tutors, or whatever. But you didn't do social psychology, you went into health psychology.

RW: So I completed my degree (in 1977) and then I wasn't planning to stay in psychology. I didn't have aspirations to be an academic. I went into the Civil Service and the reason was that my girlfriend Anne Robinson's father was a senior civil servant and a really nice guy - very bright - he was in policy and at the centre of things and I thought that sounded like a good job. So I applied for the fast track scheme and got in. I didn't express a preference for what department they were going to put me in and they put me in the Ministry of Defence!

AM: Right.

RW: Not only did they put me in the Ministry of Defence, but my first job was in the Defence Sales Organisation … basically arms sales.

AM: Wow, that must have been quite a shock to the system.

RW: It was a bit weird but I managed my cognitive dissonance by kidding myself that we need weapons to defend ourselves and other countries do as well, so why not sell them the weapons?

AM: Is that a view you hold today?

RW: No. I've discovered more about how arm sales work. There are no ethics to arms sales; it's a horrible business.

AM: So was it that discomfort that made you finish there and change track?

RW: I spent a little while in that job and then I was moved over to another job, which was in the 'naval staff' working on nuclear test ban treaties and things like that, which was probably a bit more useful. But I could see all the way up the career ladder to wherever I would get to: Deputy Secretary, even Permanent Secretary and I could see what the job was like and I was thinking … this is not what I want. And at the same time I had been trying to keep in touch with psychology as a subject. The MoD had a very good psychology library. Then Anne (we were married by that time) got a place to do a PhD and that seemed like a good idea. So I told the MoD I was leaving. It was a very interesting experience actually, because all my work dried up! No work. I guess because they thought I'd be a security risk.

AM: Okay so you started to look around. What enticed you then to the Institute of Psychiatry, which is where we met?

RW: Well actually I did my PhD at UCL (1979-1982). I was offered places in two universities: one at Birkbeck with Sarah Hampson and one at UCL with Rob Farr. They were ESRC-funded PhD places.

AM: So remind me what your PhD was in?

RW: Well, it turned out to be in attitude measurement.

AM: Ah yes.

RW: But when I started it was going to be in decision making. What happened was that in order to do the experiments I wanted to do, I had to get some decent attitude measures and I wasn't happy with the attitude measures that existed and so I developed what I thought was a better attitude measure. I still think it is; it's just a little bit more laborious to do. Instead of the participants saying on a scale from 1 to 10, what they think about something, they tell me what you think about it using *their own words* and then *a coder*, codes that answer using a scale from 1 to 10. You might think 'what's the difference?' It's that if I ask you as just a member of the public to give a number to describe your view, you've got to try and figure out what reference points to use and you have what I would term a 'range of equivalence'. You think 'well it could be a 3, it could be a 4, it could be a 5'. Whereas if I get you to express your attitude in a way that comes naturally to you, and I get a coder to assign a number to it, who sees not just your responses, but everyone else's, then they can apply the numerical rating in a more informed way.

AM: Did you compare the ratings?

RW: Yes.

AM: And were they different?

RW: What I believe I found was that the natural language measure was more accurate. If you wanted to use it to predict behaviour then it did a better job and I still think it would be, if we were to use it. It's possible now that with AI and natural language processing that this may come into its own because the coding could be automated.

AM: It would be a great research project.

RW: Yeah it wouldn't be hard really. So that's what my PhD ended up as being on and then as I was finishing my PhD in 1982, I was looking for a job. I wanted a job near where I lived, which was in Balham in South London. A job came up at the

Institute of Psychiatry, which was near Balham and that's the reason I went for it.

AM: It's fascinating how serendipity can change the course of your life really, which this clearly did.

RW: Yeah. It did.

AM: Okay so tell us about early days at the Institute?

RW: Halcyon days (1982 to 1985). I was mixing with super bright people and I got to play around with computers. Part of my job was to program a PDP11 computer to do physiological recordings for a study on the role of nicotine in cigarette withdrawal symptoms. But also I was working with Martin Jarvis who was a keen chess and bridge player …

AM: I remember when I joined, some time after you started there - you were still playing.

RW: We were. We would take long lunch breaks to play bridge with various people like Gloria Litman, Chris Brewin and Tim Stockwell: do you remember Tim?

AM: I think Tim had just left when I joined.

RW: Right, so we had long sessions playing bridge and Martin and I would also play chess. But we still got lots of work done; in fact we were very productive! But we had a very relaxed time of it. There were frustrations though. I have a recollection of being a bit frustrated with delays in getting the results back from the nicotine lab but that was probably just me being impatient.

AM: Coming back to your work, what do you think have been your one or two most important achievements?

RW: I think the single most important piece of research I have done is a trial of the drug, cytisine, to aid smoking cessation (published in 2011). It was the brain child of Witold Zatonski, the leading Polish epidemiologist. I believe that cytisine is a massive part of the future of tobacco control and it's a shame that it's not already the 'go-to' drug for smoking cessation worldwide.

AM: Why do you think that is?

RW: I think the reason lies in the 'commercial determinants of health'. It was a very cheap drug because it was out of patent and you've got to find someone who's going to invest in getting the dossier together to regulatory approval.

AM: Well that's staggering given the deaths caused by smoking.

RW: The number of deaths caused by smoking and how much money we would have saved on medication costs for smoking cessation treatment. When you compare like for like, in terms of how long you use it for, it's very similar in effectiveness to varenicline (aka Champix – a highly effective smoking cessation drug), and more effective than nicotine replacement therapy. But it's potentially incredibly cheap - at that time of the trial it cost the equivalent of around £3 for a course of treatment. It would have saved tens of millions of pounds a year in smoking cessation medication costs alone.

AM: To what extent do you think academics should be using evidence to influence policy and practice? Based or what you've just said, it sounds to me like you think that is a pretty important part of your role.

RW: I think it is. My job as an academic is to collect information but I also have a responsibility as a scientist and as a human being to be part of a process that leads to that evidence shaping policy. It's not that I expect to make the decisions, because there are other things that come into play as well. This is a discussion that became very live during the acute phase of the Covid pandemic (2020) when I was sitting on the behavioural subgroup of the UK Government's Strategic Advisory Group on Emergencies; and we were told by our Cabinet Office colleagues, that we were weren't to make recommendations!

AM: Your committee were nudge people?

RW: Well I don't like the word nudge, because it's a very narrow way of thinking about behaviour change; nudges are just a tiny sliver of the things that you can do. We put various examples into our reports of what the policies might look like - not even making recommendations - but we were even told to take those examples out.

AM: Covid was an interesting time because policy was being made very quickly. So I was wondering what lessons you thought there were that could accelerate the process of turning science into policy?

RW: I think there are lessons, but I'm not optimistic that they will be learnt. One of the key things is that science and policy should be regarded much more as a partnership; it's not that the scientists are saying 'we've got the right to tell people what to do'; it's that if you see it as a partnership, the science is informing the policy and the policy is informing the science and there is mutual respect for each other in terms of each other's expertise, there is a channel to implementation. If you're in a company, like BP or Volkswagen - they have got their R&D departments and there is a very natural feed through to the technology. They would go out of business if they didn't have that.

AM: OK, let's go back because we've fast forwarded too much. You obviously did a lot of other things besides the cytisine trial: nicotine replacement trials, glucose

trials … Tell us a little bit about some of that other work that you did.

RW: The nicotine replacement trial (published in 1983) was Mike Russell's idea. He was so far ahead of his time - the technology wasn't quite there to do what he really wanted to do. He wanted to know how far nicotine was involved in the cigarette withdrawal syndrome. So the trial had smokers abstaining from smoking for 10 days under four conditions: 1) 2mg nicotine gum, 2) placebo gum, which actually was a low dose nicotine gum, 3) an ultra-low nicotine cigarette to get the behaviour without the nicotine, and 4) no treatment. Another group of smokers carried on smoking normally. Unfortunately, people were still able to get some nicotine from ultra-low nicotine cigarette, and the nicotine gum provided only partial nicotine replacement. Nevertheless, I think we were able to show that the cigarette withdrawal syndrome was in fact due to termination of nicotine use.

AM: What about the glucose trial: where did you get the idea of using glucose to aid smoking cessation from?

RW: This was from discussions with Neil Grunberg. Neil had been a student of Stan Schachter. Schachter and Singer had developed the 'two-factor' of theory of emotion. The idea was that our experience of emotion is a combination of a physiological state and our interpretation of it. We thought the same might be true for cigarette craving. We knew that nicotine abstinence caused a physiological state of 'hunger' and that nicotine reduces hunger. What if people were mixing up hunger and nicotine craving because when they smoke a cigarette the feeling of hunger goes away? It was basically the idea that, at least a large part of nicotine craving, is a mislabelling of hunger. If that's the case then you have to consider how can you quickly reduce someone's hunger? Well, potentially with glucose tablets. So I designed a study to look at the impact of chewing glucose tablets versus sorbitol tablets on craving in people who were abstaining from cigarettes. I remember thinking when I got the data that perhaps it wasn't even worth analysing it because it seemed such a whacky idea. I think it was over the Christmas holidays in 1984/5 that I eventually had a look at the data and saw what was in fact a big effect. We then did a small trial looking at whether glucose might have an impact on smoking cessation for a few weeks and found that it did and then we did a larger, longer-term trial in 1993. Unfortunately, the results of the larger trial were not convincing. The trial had four groups: glucose only, placebo glucose only (tablets with a calorie-free sweetener), glucose plus the drug bupropion (Zyban - which had been found to aid cessation), and placebo glucose plus bupropion. What we found in a post-hoc analysis was that glucose appeared to aid cessation compared with placebo but only in people taking bupropion. A big issue with doing a clinical trial on glucose is that people are getting glucose all the time. I mean, it's not like you can stop people eating sweets, or having sugar in their coffee.

AM: Okay so difficult to design …

RW: Very difficult. From a practical point of view, the question is, would chewing glucose tablets help someone stop smoking? I think that still remains to be seen. Even if it only helped a tiny amount, glucose tablets are very cheap, so it could be worth it.

AM: Yeah, exactly. Okay so then, I know you did lots of other work on smoking and other things, but later you moved into looking at 'behaviour change techniques': the behavioural support that was offered to people trying to change their behaviour. How did you move into that field?

RW: That was because I got together with Susan (Michie) after having split up from Anne (in 2007).

AM: So more recent then.

RW: Susan had been developing a taxonomy of behaviour change techniques, trying to put behavioural interventions onto a much more scientific footing. Up to that point researchers would describe behavioural interventions using vague and ambiguous language. So having a system to classify the components of interventions, even in a simple way using language such as 'goal setting', 'use of feedback', 'social support' etc. started the process of being able to characterise interventions more systematically. Then around 2008-2010, with Susan and Andy McEwen, with the National Centre for Smoking Cessation and Training (NCSCT) - and Emma Croghan because of her position in charge of a large number of stop-smoking services - we were able to classify what the different services were using in terms of behaviour change techniques and then look at the success rates of the services. It was only a correlational study but we did find relationships between use of particular behaviour change techniques and success rates in terms of smoking cessation. That informed the training scheme that we built for the NCSCT.

AM: Yes and that influenced practice. But we have jumped over your influence on the setting up of the stop smoking services in Britain in 1998…

RW: Well, both of us (and smokers worldwide), owe a debt of gratitude to our friend Martin Raw, because without Martin this wouldn't have happened. He had been asked to do yet another leaflet giving guidance on smoking cessation and he pointed out that no one reads them and so wanted to do it properly. Martin decided that we needed comprehensive evidence-based guidelines in the UK with a broad consensus from academics, professional bodies and relevant charities. So it was basically Martin who started the process off and we hitched a ride!

AM: I completely agree and Martin, over many decades, persistently and often single-handedly, ensured cessation is an important component of tobacco control, both in the UK and internationally! Okay, so let's go back, the pharmacological research and the behavioural change research morphed into the PRIME theory of

motivation and the COM-B model of behaviours, so tell me a little bit about those.

RW: PRIME came first; working in the field of smoking cessation and addiction, I was very interested in motivation - because if addiction is anything, it's a disorder of motivation. I had been asked by Griffith Edwards (Editor of Addiction at the time) to edit a special issue on Theories of Addiction, and then Griffith asked me to edit a book on it. I'd just been involved in editing another book and I swore I would never edit another book in my life! So I thought I'll just write it - it will be easier. So I got a contract with Wiley to do a book on theories of addiction but they are all basically theories of motivation that happen to be applied to addiction. And I thought each of these theories was good as far as they went, but they didn't include the stuff that other theories had in them and vice versa. So I thought surely we can come up with a theory that takes the best of the theories and puts them together; and that's what I tried to do with PRIME Theory. So the book, 'Theory of Addiction' published in its first edition in 2006[1] is a sort of crib sheet for the various different theories of motivation as applied to addiction and then an attempt to synthesise them. The PRIME acronym came about at the kitchen table when I was sitting with my son Matthew, who is a graphic designer, and we were trying to come up with a diagram to represent the theory. And he said 'What are the components? Well I said 'plans … they are really important', 'obviously responses … they are important', 'impulses are important', 'motives' and then 'evaluations'. And we both said 'Oh, that spells PRIME!'

AM: So that was the origin. And the logo?

RW: This reflects the relationship between the components. Plans provide an overarching sort of structure of behaviour but they don't directly influence responses. Plans have to work through evaluations, which have to work through motives, which have to work through impulse and inhibitions.

AM: Skipping forward, another one of your many legacies, Robert: the Paper Authoring Tool (started in 2017 and continually updated since). (https://paperauthopringtool.com). And another is the 'Addiction Ontology' (https://addictionvocab.org). I'm interested in knowing a little bit more about how you started those and why, and then what do you think their impact is.

RW: The Paper Authoring Tool (PAT) evolved out of two things. One was working as Editor of Addiction and being frustrated with the low quality and inefficiency of

the reporting of randomised trials. And it was partly working with Susan on the 'Human Behaviour Change Project' in which we were trying to achieve automated annotation of randomised trials to extract the information. When you annotate trial reports you realise how much information is missing. The idea of PAT is to give much more support to authors. The existing CONSORT guidelines take you so far but what if we almost made writing a paper like filling in a form. So PAT comes from this idea that you can give someone a form to fill in in which they are prompted to do everything. We got funding from the SSA and other sources to develop this tool. But we still have a huge issue if people are inconsistent in their use of language to describe constructs. If people are using the same term for different things and different terms for the same thing, it's still going to be really hard to automate the process of information extraction: that's where ontologies come in. They are ways of systematising the way you represent things. So you have uniquely identified 'entities' - measures, outcomes, methodological features and so on. Every entity is uniquely specified. It doesn't matter so much what you call it - what label you use – it has a unique computer-readable identifier. You can get away from all this sort of, 'what is addiction?' nonsense. If you've got a definition of something you think is important, you have that definition, you have a unique ID for it, you can call it addiction - you can call it whatever you like - it doesn't matter - it's the uniquely identified construct that's the key. So what we've done is to 'ontologise' the Paper Authoring Tool, so that with every key construct or entity, you can identify an ontology ID and link to it. A really important feature of PAT is it produces a machine readable version of the paper, so that if everyone used it no one ever would ever need to annotate a paper again!

AM: How did you come to be engaged with the *Addiction* journal?

RW: Working at the Institute of Psychiatry back when I'd just finished my PhD, it wasn't long before I was asked if I would join the editorial team. Griffiths Edwards, the Editorial in Chief at that time asked if I would become an Assistant Editor and we were also Members of the Editorial Board at that time. But the journal was much smaller in those days, so this was the early 1980s.

AM: It was all done by paper and …

RW: And it was all done by post … and things actually moved on quite quickly in terms of the technology from then. So I was an Assistant Editor and a member of the Editorial Board. Then after some years doing this, I think Griffith asked if I would take on a more senior role in the journal, so I became, well actually during that time, Griffiths had changed it from the *British Journal of Addiction*, to *Addiction*, which was a really good move.

AM: Why did he do that, just to internationalise it?

RW: It was to internationalise it, yes. And of course even at that time, probably most

of the articles that were published in it weren't from Britain and they weren't about Britain, so it was a bit weird to call it the 'British Journal'. But it was a terrific move and he also at the same time established three regional offices, the one in London, which covered UK, Europe, Africa and Asia and then one in the United States, which Tom Babor was in charge of and that covered North and South America and then one in Sydney, which was at that time Wayne Hall, who was the Regional Editor and that covered Australia and New Zealand. So that was a really important move to take the offices out of just being in London and actually spread them across the globe.

AM: You were responsible for UK, Europe and Africa?

RW: Yeah exactly, what we called the 'rest of the world'! So then also Griffith asked if I would become Deputy Editor, or, I'm just trying to remember, but actually I think Martin Raw was Deputy Editor at that time and then Martin stopped being Deputy Editor and Griffith asked if I would take over that role. I think Martin was doing it as a paid role and did a fantastic job. Martin was innovating all the time, and that's one of the great things about *Addiction*; it's been a journal that keeps innovating. And so a lot of my role as Deputy Editor, was to come up with projects and ideas for how we could innovate in the journal. One of the things that I did in that role was to help set up first of all an email system for handling manuscripts and then a database. I commissioned a bespoke database. At that time publishers were just starting to do their own online databases and submission systems, but they weren't very good.

AM: No it wasn't Wiley at that time.

RW: I think at that time we were Taylor and Francis.

AM: That's right.

RW: So I commissioned a bespoke one that we used for a bit, but then it became really obvious after a few years that whatever you thought about the publisher's systems, you really basically just had to go along with those. So then we went with the publisher's ones. The other big change was that we expanded the decision making editorial team from the three regional editors to about 20 or so senior editors. We gave a lot of thought before doing that, because as you expand the decision making team, there's all sorts of scope for inconsistencies. So to help to address that we created the Strategic Advisory Group, which was regional editors, plus some strategic advisors and others, so that we could keep an eye on the quality and train and gave advice to the senior editors, so that we could maintain as far as possible a consistent quality.

AM: So that's why, because in many ways it could be seen to be inefficient having a two-tier system where you have an AE and SE, but that was to maintain quality.

RW: It was to maintain the quality, while coping with the increased flow.

AM: Of submissions.

RW: Yeah and of course another big thing about the journal has always been its commissioning and so we also had a Commissioning Editor. And we had to develop a system that would also maintain quality of the commissioned work as well and we started to create a set of commissioned series, which I think have been terrific for the journal - 'Addiction Opinion and Debate,' 'Addiction Theory', 'Methods and Techniques,' with John Stapleton, who I also arranged to be appointed as Stats Editor.

AM: When did you become Editor-in-Chief?

RW: Well I had been Regional Editor and then Deputy Editor for a bit and Griffith was looking to retire from the journal and he asked if I would take it on, the editorship. I said 'no' because I honestly didn't think I had the time to do it. It's a very big job, especially the way that *Addiction* is run. But Griffith was never one for taking 'no' as an answer! With that silver tongue that he has he eventually managed to persuade me and I'm really glad he did, because it was a real privilege. And actually even, at that stage, he had built such a strong team of people that as editor you weren't isolated at all and my job then was not just to take over from Griffith, but to slot into a team that already existed and to help to build and grow that team.

AM: So you then managed that team.

RW: Yeah manage is probably putting it too strongly. I don't really think they needed managing. I mean we all kind of worked together and what was really nice about it and I think still is, is that everyone felt ownership; and it also meant that there was so much that we could do in terms of innovation, because everyone was coming up with ideas for things and because the journal made a lot of money there was plenty of budget there for us to do things if we wanted to innovate, including things like paying for a Stats Editor and eventually, and paying for particular projects.

AM: So I know you continued to innovate and one of the areas was to build up submissions for underserved regions of the world.

RW: Well Griffith always had this view that this was an international journal that supported people to do what they thought was important and as part of that we were keen to help to develop addiction science in other parts of the world. One of those initiatives was us working with our Chinese colleagues to try to help to build a research agenda in China. And I know that Keith Humphreys has got very good connections with many parts of the world, including the Middle East and we've got strong networks in South East Asia and so on, so I think that has been a big part of the journal, to try to bring on the science in countries that are less well

resourced.

AM: So how successful do you think that's been, did you see a change?

RW: I think it's still very tough, because we are just one journal and we're working in a global situation where the infrastructure and the training and the resources and support and so on is very unevenly distributed. So I think it probably is a drop in the ocean. But there is a direction of travel and I think as long as the journal continues to have that mission and vision, I think that we will continue to make progress.

AM: Any other innovations that you introduced that you would like to tell us about?

RW: Well I think one of the ones that I like was the introduction of the concept of the 'citeable statement'.

AM: Yes!! Tell us about it.

RW: The idea was to frame the conclusions of the abstract in a way that you could just lift directly from the conclusions and put into the introduction of another paper. So the question is why would you do that? And the answer is, because of the way that we get a kind of miscommunication when we paraphrase things. So someone would say something in the abstract, that would then be paraphrased in the introduction of someone else's article, they then say something in their conclusions, which again would be sort of mis-paraphrased. And by the time you've gone a couple of links down that chain, you haven't actually adequately represented what the studies' findings were and so it's a discipline to write your conclusion in a way that doesn't have to be paraphrased. I don't know whether it's still going in *Addiction*, I hope it is, but it was something I think that made a difference to the quality of the output from the Journal.

AM: Absolutely and it's a good skill to learn. Okay that's very important, any other innovations you would like to mention?

RW: I think the 'Methods and Technique' series is potentially very useful. It's got a way to go still but has great potential. Methods are being developed all the time in behavioural clinical sciences and social sciences and I think it's the journal's responsibility to try and bring these to its readership and help people to understand those methods when they are reading about them, but also where appropriate to use them themselves.

AM: I agree. The readers would probably be interested in your thoughts on the future of publishing. I certainly feel completely inundated at the moment with review requests and I know a lot of other people are struggling in the same way, where do you think it's going?

RW: I think we are on the cusp of a seismic change in publishing. I hope so. Where are all the pressure points? Well one, as you say, is reviewing. Another is cost. I think the move to open access, it was hoped was going to demonopolize the field, so that the vast profits that are made by publishing houses would be somewhat reduced and universities and tax payers and people who pay for journals, would get better value for money. That hasn't happened. I think those are two very big pressure points. I think another big pressure point is the 'replication crisis' as it's called. It's not new; if anything over the last ten years we have seen an increase in quality of the papers for all sorts of reasons and partly the Open Science Movement and partly things like CONSORT guidelines; but there's a massive way to go. Then the last pressure point I think is the issue of, with the growing volume of research, how we find it and how we integrate evidence. So those are the challenges and the solution is AI. We have already seen movements in this direction. There is a journal called Qeios (qeios.com) which I'm a big fan of. Qeios is a publishing platform that is free to publish in, free to read and its financial model is that you become a member and if you're a member you get access to certain additional services. One of those services is an automated system for finding peer reviewers and it's very successful in finding peer reviewers. Membership is very cheap, and this is the thing with an organisation like Qeios that aren't out to make vast amounts of profit; journals don't have to be very expensive. How it finds reviewers using AI is so much better than the way that we do it. So one might ask 'Why would anyone review for Qeios?' which doesn't have the prestige of the *British Medical Journal* and the answer is, because your reviews are published.

AM: Yes, they're transparent.

RW: Yes it's transparent and so it's a win, win. And it also, the way QEIOS works is that the reviews don't stop you publishing the paper; what they do is help you to improve it, or perhaps point out that it has some fatal flaw. Now you've got a system where you can curate published work. The curation doesn't take place before you are allowed to publish something; it takes place out in the open. So we're moving from this sort of system of peer review for the purpose of censorship to one in which everything is transparent. Reviewers get to be acknowledged automatically, because their review gets a DOI and so on, everything is out in the open and it's much more of a community of practice.

AM: So do you then see that journals like *Addiction* will become obsolete?

RW: I think they will change. Qeios doesn't have to be the only journal doing this and it's just one of many possible variants on this approach.

AM: Okay, so you had been talking about the Paper Authoring Tool (PAT).

RW: Yes, so PAT allows for so much of the slog of reviewing to take place before the article has even been submitted. But it also allows an opportunity for the journals

to do their own checking of quality, ultimately using more fancy AI in terms of the quality and appropriateness of the research design, the extent to which conclusions are supported by the evidence and so on. So you can imagine a situation where so much of the work that is actually done quite badly by humans is automated and done much better and then the human job in terms of quality assessment is much more in relation to the interpretation and making sure we ask the right questions.

AM: I would like to ask your thoughts on where the field of smoking research is going and your involvement in it. Should we now be more concerned with implementation, or are we still learning new things and advancing our theories?

RW: I think both. The two go hand in hand because as we make behavioural science more scientific and get greater clarity on things that we're talking about, that will advance our modelling and our theories and our data collection, and it will also mean that the findings are more usable by policymakers. To give you an example, I'm working on a paper, which turns the systematic review concept on its head. With systematic reviews, what you are doing is estimating an average effect size across a number of studies. But that is just summarising data you've already got. What policymakers and practitioners want is for you to *predict* what's going to happen if they deliver a particular intervention in a given population, in a given setting and in particular way. Systematic reviews do not provide that information directly. So what we are doing in the Human Behaviour Change Project[2] is annotating the reports of randomised trials with all the information about the intervention, the study participants, the setting, methodological features of the study and so on. We end up with about 70 features of a study and then for each arm of the study, we use machine learning to use those features to predict what would happen if you had some new combination of intervention components, setting participants etc. We have implemented this on a website for smoking cessation treatment.[3]

AM: So you've coded the smoking cessation interventions across how many studies?

RW: We've done about over 500 studies with over 1000 study arms.

AM: Wow.

RW: It's a huge amount of work obviously. If people had used the Paper Authoring Tool then it would have already been coded!

AM: Indeed. Changing tack now to what you were doing in the Covid-19 pandemic. Tell us a little bit about what your role was.

RW: When Covid broke out, the UK Government set up an emergency scientific committee, to advise them on how to deal with it – the Strategic Advisory Group on Emergencies (SAGE). Actually SAGE is almost like a standing committee that

gets activated when you have these emergencies. In the previous pandemic, which was nothing like as bad as Covid - the H1N1 or swine flu pandemic - Susan Michie was the only behavioural scientist on SAGE at that time and she said 'I can't do everything, so I want to set up a subcommittee of behavioural scientists', which she did. That was the Scientific Pandemic Influenza Group on Behaviours: 'SPI-B'.

AM: Great name.

RW: Indeed! So when SAGE was activated for Covid, they set up all their subgroups and SPI-B was one of those. I was invited to participate in SPI-B because of the work I had done with Susan on behaviour change. It was a very positive experience from the point of view of my interactions with the group. The less positive side was that it seemed to me and some other colleagues that the advice was not actually being heeded. For example, from the evidence it became pretty clear that the dominant thing that was preventing people from self-isolating if they had symptoms was that they couldn't afford to, but the Government decided not to address that effectively.

AM: Was there any thought given to addictions during this time? Was much thought given to the impact of all of this on addictive behaviours?

RW: We did have a lot of data on it - through the Smoking and Alcohol Toolkit Studies for example - so we were able to see that alcohol consumption and problem drinking went up pretty sharply. And weird stuff happened to smoking that I still don't understand - quitting went up, but prevalence didn't seem to go down!

AM: You mentioned the 'Toolkit Studies' and I don't think we've talked about it in this interview. It would be a big omission if we didn't, so can you tell us about them and what let you to develop them?

RW: It started with the Smoking Toolkit Study. This was a study that I got the idea for back in - probably about 2000, but was only able to get the funding to start it in 2005. It's a series of monthly national surveys; each one is a different sample. In the early days each sample was followed up for initially 6 and then 12 months. So was a kind of rolling prospective study, or a series of cross sectional studies each of which had a follow up. I felt it would be useful to create a good time series to track smoking and information relating to smoking such as quit attempts, quit success, motives related to quitting, dependence, what people were using to quit as a tool both for science and policy. For science: to help us to understand at a population level what happens when, for example, you introduce a new stop-smoking drug into the market or when e-cigarettes come on to the market. Without a time series you don't have enough data to go on, but if you've got monthly data and you see prevalence is going along like so and then you introduce e-cigarettes into the market and suddenly you get a big shift, or even maybe a gradual shift. The reason I called it the Smoking Toolkit Study was because we

would have a core set of questions and then anyone who wanted to could fund the addition of further questions that they wanted answers to - questions on smoker identity for example - and get the benefit of the data that was already being collected. The first major paper that got published from the Smoking Toolkit Study was on 'spontaneous quitting' – showing that around half of all quit attempts are made with no pre-planning and that these were more likely to succeed than planned quit attempts. This was not my idea actually. It came from work done by Lynne Larabie, a GP working in Canada. It was Glaxo SmithKline and Pfizer who originally funded the Smoking Toolkit Study and then the English Department of Health, and then Cancer Research UK and more recently with additional funding from the UK Prevention Research Partnership.

AM: The Smoking Toolkit is a fantastic resource and it's now broadened to include alcohol – the Alcohol Toolkit Study. It really is incredibly useful from a policy perspective as well as a scientific perspective. But it's interesting you talked about your relationship with Glaxo SmithKline and Pfizer because in our field, conflicts of interest are a massive issue. Where do you draw the line?

RW: I draw the line with the tobacco industry! I have some colleagues who think it's OK to work with the tobacco industry and I respect their decision but I don't agree with it. I think that the industry has such an irreconcilable conflict of interest that the costs outweigh the benefits, even if they don't have any direct influence on what you do. I think it gives them a sort of respectability that is worth millions and is very damaging. With the pharmaceutical industry, I think it depends. I think you have to recognise that pharmaceutical companies are commercial operations and for them the bottom line is shareholder value. I've had experience working with the pharma industry, where I've been asked to do something that I am not comfortable with and I've said 'no'. And then they have backed off quickly. But if we didn't have the pharmaceutical industry we wouldn't have drugs like varenicline or nicotine replacement therapy. I know there are people working in the field of tobacco control who think that would be fine - that the drugs have been at best a distraction and at worst actually a positive harm. I don't agree. I think that the evidence, not just from randomised trials, but also from the population level studies, has shown that these drugs can make a significant difference to people's lives. So my feeling is that it's OK as long as people like myself always recognise that we are working as public health experts and that we have to maintain the separation in terms of our objectives. Some people may think I'm being naïve because you can't avoid getting sucked into the pharma companies' agendas but my experience with pharma has mostly been positive.

AM: OK. Let's talk a little bit about nicotine and the future and what the state of the field is at the moment. In England we are seeing an increase in youth vaping and the field is very divided internationally about the role of nicotine in society and the role of products like e-cigarettes. What's your thinking about what's going on at the moment?

RW: I'll start with what I would *like* to happen and then I guess that would provide a reference point or a benchmark against which we can look at what I think *will* happen. What I'd like to happen is a world in which practically no one uses nicotine in any form. Now that may seem a bit sort of extreme to some of my colleagues but my opinion based on the evidence is that on balance nicotine doesn't benefit people who use it – except to stop smoking.

AM: Would you say the same thing about alcohol use?

RW: I'm more conflicted about alcohol. As a drinker, I do get enjoyment from it but I would also say that in terms of human suffering and happiness, the world would be a lot better without alcohol, to be honest.

AM: Without?

RW: Alcohol just causes so much harm to so many people. Yes there are people like me who get pleasure from it, but the harm is just not worth it. With nicotine, I am less conflicted. I think far fewer people who use nicotine get anything from it apart from relief of withdrawal symptoms. And although it doesn't create the same level of immediate harm that alcohol can do in terms of violence, accidents and acute disease, it *does* make people's lives worse. People who smoke suffer more depression and anxiety than people who don't; when people start smoking, their depression and anxiety goes up and when they stop smoking it goes down. Also, people who have ever smoked for any length of time report higher level of pain than people who have never smoked; the pain is higher in people who used to smoke, even if they stopped decades ago! That raises for me the hypothesis - and I wouldn't put it higher than that - that a period of smoking - and I think nicotine is probably the chemical that is involved here - raises your overall pain levels, in a way that then is sustained.

AM: And also in relation to the separation of smoking and nicotine, one of the beauties of what's happened is that we now have cohorts of people who are using non-combustible nicotine products. So over time …

RW: … we can test the hypothesis!

AM: So in a Utopian world, nobody would be using these drugs, and specifically around nicotine you feel there's very little benefit from the drug, even if it could be separated from smoking?

RW: Obviously many people say they enjoy it and there are beliefs about it helping with mood regulation and so on. I think those are probably quite limited and the minimal benefits could be achieved in other ways. But having said that, those harms are tiny compared with the harms of tobacco, and particularly smoking tobacco or using tobacco that's high in nitrosamines. So the question is what's realistically possible and I think it's a realistic proposition that we would move

the whole industry from a tobacco industry to a nicotine industry. Unfortunately, at least globally I don't see that happening at the moment. If you look at the revenues of the tobacco industry they are as high as they've even been. If you want to invest and you have no ethics, the tobacco industry is a good bet. I think it is feasible for us to get to a point where we could transition to a nicotine industry if there were the political will.

AM: Agreed. It reminds me of some of the so-called 'end game' discussions, where people were talking about regulated markets, so it's about regulating the industry?

RW: I'd go further. Look at New Zealand and its new tobacco control policies that seek to make the sale of tobacco effectively illegal in our lifetime. It is trailblazing in this. I think that governments, if they choose to, could put the tobacco companies on notice, that tobacco is on the way out. They are going to make tobacco history - a very unpleasant part of human history!

AM: We have smoke-free 2030 vision here in the UK, Robert. So how do we get there in your view - using the New Zealand type model?

RW: I'd say that there is a better than 50:50 chance that the New Zealand Model of raising the legal age of sale year on year will spread throughout the world. I think once people see how it could work in their jurisdiction, they may adopt it.

AM: So your message here is get a move on in relation to the tobacco control strategy that we need to have to get to a smoke-free 2030.

RW: Specifically in relation to how you get to the ultimate vision of the *nicotine-free* world, I think there are exciting developments in the science. Cytisine is one which we've talked about, but also I think, and linking it back to the behavioural science, we are at the foothills of discoveries in behavioural science. And once behavioural science gets onto a better scientific footing, with the benefit of machine learning and so on, I think that we can tailor our population level interventions much more effectively, and we can also tailor individual level interventions so that they can be scaled to population level.

AM: One question I wanted to ask you was about the influences on your professional life. Who are the greatest influences?

RW: Perhaps in the early days my undergraduate tutor, Peter Kelvin, who when I was studying psychology at UCL, made me realise that I might be quite good at it.

AM: Yeah you mentioned him - the social psychologist.

RW: Then I was so lucky to land that job at the Institute of Psychiatry's Addiction Research Unit with Mike Russell and Martin Jarvis, and having you as a PhD student … though I didn't do anything to help your PhD - you just did it …

AM: Nothing could be further than the truth - you enthused and guided me throughout my research career!

RW: Well I learnt how to be a proper scientist in the Addiction Research Unit and Mike and Martin were really important in that. And more latterly I would say the biggest influence has been Susan Michie, because she is a visionary, like Mike Russell. She has a very clear idea about what she wants and it combines all the things that I'm interested in, combining public health and behavioural science with artificial intelligence. Her dad was one of the founders of artificial intelligence, Donald Michie and her mum was Ann McClaren who was the person who did the biology behind test tube babies so she comes from a dynasty of scientists. And her unswerving determination, which I don't have, to get stuff done has been a source of inspiration to me as well over the last 15 or so years.

AM: I wouldn't say you don't have a determination to get things done, because looking back at your career, Robert, you've achieved an enormous amount. We've only touched on a few things in our interview, but it is abundantly clear you do have determination and tenacity. I might also add, that it doesn't sound like you are going to be retiring any time soon?

RW: I think I will be doing stuff, but as a hobby!

AM: Gosh well if people could be as impactful with their hobbies as you are .... Is there anything else you would like to say, Robert?

RW: I think the only other thing I would say is that, as Woody Allen has pointed out, we should never underestimate the power of luck in shaping our lives. I have dodged a lot of bullets by pure luck and I've found myself in great positions also by pure luck - and I'm not being falsely modest. I've done all sorts of things for the wrong reasons and they've worked out right. So anyone thinking about going into a career in science, or psychology, or public health, the trick is to ride your luck. I think what I've done is: I've ridden my luck.

AM: We have to end now Robert, but readers will know that there was a lot of curiosity, intelligence and foresight that went along with that luck! And I want in particular, to thank you for the influence you had on my career and the careers of many other researchers like me, who as a result of your enthusiasm and stewardship, carried on working in one of the most important and deadly public health issues of our time, tobacco. On top of that, I want to acknowledge your impact on saving the lives of thousands of people, who without your research would likely have continued smoking with its concomitant deadly health impacts. We ALL owe you a massive debt of gratitude.