

# Integrating Administration, the Clinic, and Research: An Interview with Dr. Jacques Bradwejn

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### ABSTRACT

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Dr. Jacques Bradwejn is a Professor of Psychiatry, the Dean of the Faculty of Medicine, and a past Chair of the Department of Psychiatry at the University of Ottawa. He trained in Medicine at the University of Sherbrooke and in Psychiatry at McGill University. He completed a Research Fellowship in basic research in neuropsychopharmacology at Université de Montréal. He began his career as a clinician/researcher in the McGill University network and continued at University of Toronto, before coming to the University of Ottawa. He has also served as the Psychiatrist-in-chief at the Royal Ottawa Hospital and the head of Psychiatry at The Ottawa Hospital. In addition to his teaching and administrative engagement, Dr. Bradwejn has been extensively involved in translational neuropsychopharmacology research investigating the underlying biological etiology of anxiety disorders such as panic disorder and social phobia, as well as integrating clinical and psychological approaches towards the management of anxiety disorders. We were able to discuss with Dr. Bradwejn his dedication and extensive commitment to clinical care and advocacy, biomedical research, and administrative leadership, as well as his advice for medical students with regards to juggling a multitude of responsibilities and pursuing leadership roles within their careers.

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### RÉSUMÉ

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Dr. Jacques Bradwejn est professeur de psychiatrie, doyen de la Faculté de médecine, et un ancien président du Département de psychiatrie de l'Université d'Ottawa. Il a été formé en médecine à l'Université de Sherbrooke et en psychiatrie à l'Université McGill. Il a complété une bourse en recherche fondamentale en neuropsychopharmacologie à l'Université de Montréal. Il a commencé sa carrière en tant que clinicien-chercheur dans le réseau de l'Université McGill et a continué à l'Université de Toronto avant de venir à l'Université d'Ottawa. Il a également servi en tant que chef de psychiatrie à l'Hôpital Royal Ottawa et à l'Hôpital d'Ottawa. En plus de ses tâches d'enseignement et d'engagement administratif, le Dr. Bradwejn a été largement impliqué en recherche en neuropsychopharmacologie traductionnelle, enquêtant l'étiologie biologique sous-jacente des troubles anxieux tels que le trouble panique et la phobie sociale, ainsi que l'intégration des approches cliniques et psychologiques envers la gestion des troubles anxieux. Nous avons pu discuter avec le Dr. Bradwejn de son dévouement et de son engagement extensif aux soins cliniques et à son plaidoyer, à la recherche biomédicale, et au leadership administratif, ainsi que ses conseils aux étudiants en médecine en ce qui concerne jongler une multitude de responsabilités et poursuivre des rôles de leadership au sein de leur carrière.

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### CAN YOU PLEASE TELL US ABOUT YOURSELF AND YOUR ROLE AS A PSYCHIATRIST, A RESEARCHER, AND THE DEAN OF UOTTAWA FACULTY OF MEDICINE?

In terms of my personal origins, I was born in Montreal and grew up in France. My mother was French from Brittany and most of my ancestors didn't speak French, they spoke Breton. My paternal background was from a Jewish family in Poland. My father basically lost all his family in the Holocaust, and then eventually he was given French citizenship after the war. He met my mother in France and eventually came to Montreal. I was born in Mon-

treau, but grew up in Brittany until adolescence. So I'm basically the product of destruction on the father's side, but also on the mother's side because my hometown was on the Atlantic and the Germans had built U-boat bases by the sea, so they were bombed [to hell] by the allies.

### DO YOU HAVE AN AREA OF SUBSPECIALTY? WHAT INTERESTED YOU IN THE MANAGEMENT OF ANXIETY AND PANIC DISORDERS?

When I was a medical student, there were a number of special-

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**Keywords:** Psychiatry; Administration; Anxiety disorders; Jiao Tong University

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ties that I particularly liked. One of them was psychiatry, but I liked internal medicine, neurology, cardiology. When I was a student at McGill, I rented a room in a house that was owned by the chair of psychiatry at the time in Montréal. He was from France and worked at Liège and sometimes I would help him translate some of his work. So, I got interested in the field. What interested me the most in psychiatry is that you dealt with medicine, you dealt with the brain, but it is also a field where you need to know a lot about people. Plus, there were a lot of possibilities for research. After I did one year of internal medicine, to have a better grounding in medicine, I went into psychiatry.

During my training as a resident I did some research in a specialty unit that was interested in mood and anxiety disorders, so I applied for a fellowship in mood disorder research. I had planned to do this fellowship at Yale University, and I received a FRSQ fellowship support to join the basic science laboratory of Dr. Claude De Montigny. Claude De Montigny was well known for his research on the role of serotonin and mood disorders [and] that's what I [had] applied for. By the time I had integrated into his lab, he had moved from Yale to Université de Montréal and had decided to expand his research to look at what was up and coming at the time, which happened to be brain peptides. It was to look at the role of cholecystikinin (CCK), which was a known gut peptide. It had been found by various research groups that there were high concentrations of fragments of CCK in the brain and at the time they were known to be co-localized with dopamine. Dopamine was [linked to] schizophrenia and therefore, the question that was of interest was what might be the role of CCK on dopamine neurotransmission and could there be a role for CCK in the treatment of schizophrenia. I was using an approach called microelectrophoresis, which was the main tool of investigation used in De Montigny's laboratory. What you do is take a live rat, drill a burr hole and use a micropipette that records neuronal activity and enables you to inject pharmacological products and see how it modifies the firing rate. So for the first 6 months we used to say, "another day, another rat." We would inject some CCK and record the dopamine activity. One experiment would increase the firing rate, the other would do the opposite or have no effect. Six months were spent without consistent results.

One day, by pure serendipity, because there was a fellow at the Douglas Hospital who had been giving high doses of benzodiazepines for acute psychosis and it would work without much sedation, I asked the question, what might be the role of benzodiazepine on dopamine activation. Because the micropipettes had 6 barrels in one I would put dopamine, in the other CCK and in another a benzodiazepine and look at the effect of interaction on each of these on each other and on neuronal firing. CCK, on its own, was known to activate neurons, as had been described in other laboratories. When I injected benzodiazepines with CCK, there was a full antagonism of CCK activation. I went to my boss, De Montigny, and asked if I could change projects and look at the

role of benzodiazepine on CCK and the role of CCK in anxiety and he says, "Okay, I'll give you a few weeks on it and we'll see." That was fruitful. We found out a benzodiazepine receptor agonist could completely antagonize the excitatory effect of CCK in the hippocampus. Very low doses, such as 4–5 mg of Valium, acted very specifically and selectively on CCK; so that was a finding. My first paper on that was in *Nature* [1]. I thought to myself after a paper in *Nature*, from there it's only to be downhill with the next papers! After three years, I went back to a hospital career and did clinical research. I intended to have a career like [Dr. Michael] Schlossmacher, to do basic laboratory and do clinical work, but I became very allergic to rats, which is not unusual. I ended up finding a position in a McGill-affiliated hospital and setting up a clinical research unit. So, that's what got me into research and that worked well. We had lots of results, good grants, and publications. I eventually moved to Toronto to investigate the action of CCK in humans, using PET/MRI equipment that was readily available at the then Clarke Institute, which is now the Center for Addiction and Mental Health.

My area of subspecialty was dictated by research during the fellowship. We showed the benzos inhibited CCK-induced-neuronal activation, so the question was what the role of CCK may be in anxiety? That was the question from the original animal research. As I started my career at McGill, I chose St. Mary's Hospital, which was a smaller hospital. There were not many resources, but it was a good environment to set up a team and so I set up a clinical research team. The first question we tested was if CCK is anxiogenic. If its action is antagonized by benzodiazepines, could this peptide provoke anxiety in humans? So the first test was to inject it into patients. We were the first to report that a short fragment of CCK [acted as a] panicogenic. It very reliably induces a panic attack [within] 20 seconds, at doses as low as 25 mcg. That led to looking at where might it act, how might it act, it's interactions, which led to a lot of papers. Will we ever get a medication that comes out of that? That's yet to be done because it's very hard to produce peptide analogs. There were a few attempts, but there is much less being developed for neuroscience in terms of drug development right now. Aside from potential drug development, we also were able to show mutations at the CCK receptor gene that occur in a higher frequency in panic disorder patients than healthy controls. This finding has opened new research avenues in anxiety disorders.

### **WHAT GAPS EXIST IN THE UNDERSTANDING OF ANXIETY DISORDER? IN YOUR OWN RESEARCH OR IN THE RECENT LITERATURE, WHAT FINDINGS HAVE THE GREATEST POTENTIAL TO HAVE A BENEFICIAL IMPACT ON PATIENT CARE?**

When I was in Quebec, I set up an association on anxiety disorders that all the faculties of medicine were a part of. It's called ATAQ (Association Trouble Anxieux Québec). The purpose of the organization was to not only [disseminate] educational material

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to physicians, but also for patients, because in the 80's and 90's not too many family physicians knew about anxiety disorders. Patients could go on and suffer with panic disorder for an average of 10 years without getting a diagnosis and then being not well treated. We did a blitz of information in the media. We would publish small booklets that were sent to the Collège des médecins du Québec and to all of the family physicians to enhance general knowledge and to patients and it did work in enhancing awareness and knowledge of the anxiety disorders.

The challenge [today] is mainly access to treatment. [Although] more and more of the family physicians know about it, we have to keep promoting education because they are often overloaded with technical knowledge about all specialties. The challenges are access to treatment, [including] access to psychiatrists and psychologists, as well as competent treatment. The paradox in psychiatry for pathologies like panic disorder [is that] the treatments, [regardless] of whether they are pharmacological or psychological, do work. The success rate when they are given by experts is high, very high, much higher than [most] other pathologies in medicine, but the problem is access to them. The health care system is not well organized. The psychologists are not free. The challenge is not the pathology itself or the tools, but it's the access. That's the biggest problem.

There [is] potential to improve health organization. For example, when I was the chair of psychiatry, we implemented a program to organize mobile crisis units. It's a hotline that if necessary sends a team to go to your home and assesses whether there's a need for an appointment, facilitation of a quick referral, or bringing them to an emergency department. The team has a mental health worker and a police officer, so you can act on the spot and have a court order if necessary and it works well. [They stay] at The Ottawa Hospital for acute care, or The Royal or CHEO (Children's Hospital of Eastern Ontario) [for longer care]. This is an example of healthcare system integration that increases access to and efficiency of care that optimizes the use of existing diagnostic or therapeutic knowledge.

### **WHAT ADVICE WOULD YOU GIVE TO MEDICAL STUDENTS TO PREPARE THEM FOR THEIR FIRST CLINICAL EXPERIENCES IN PSYCHIATRY?**

[As medical students], your bias, [whether] positive or negative, will determine your experience. Some students are more into the technical aspect of medicine and not comfortable with too much interpersonal interaction. In psychiatry, you have to interact with people. If there is some discomfort, the experience can be very, very hard. It stretches the level of comfort for some students. Others who perhaps may be interested in the field or family medicine or a field with more personal interaction could like it. As much as possible, [students] should have an open mind and have a bit of perspective.

The field of psychiatry [has] a very good future. However, as with the rest of medicine, it needs more humanism. It's one of the reasons we set up the Medicine and Humanities program. We noticed [that] after 4 years [of medical school] empathy goes down, [while] knowledge goes up. The risk is having technicians at the end—good technicians who come out with very poor people skills. In psychiatry, the core of the profession is the relationship. You have to have yourself together because people put not only their limb or their body part, but also their soul in your hands; so that's the core of the relationship. Then, there's more and more knowledge about pharmacotherapy and psychological techniques that do work and can be used from that core, specifically for a patient. Psychiatry was always about “personalized medicine” and will continue to be more so and that requires a strong relationship between the expert and her/his patients.

### **WORK-LIFE BALANCE IS A CRITICAL ASPECT OF WELLNESS AND MENTAL HEALTH. HOW DO YOU BALANCE YOUR CAREER RESPONSIBILITIES WITH PERSONAL TIME?**

Balance is not a good concept for us. You know why? Because balance means I do more of one and less of the other. What happens if you like your profession and it involves a lot of your time and your passion and [leaves less time] for your marriage or your familial life or your friendships? That notion in the business world with executives was [discarded] 10–15 years ago. What's much more appropriate and practical is [the concept of] work-life integration. So what does that mean? It means that if you [shift your focus] from your interests to your core values, these values are going to drive whatever you do in whatever role you have. It's no longer who I am and how much time I can give my kids and my hobbies. It's more like who am I and how do I express who I am in what I do? At certain times, you might do more at work, and at certain times you might do more of something else. If you know what your core values are, you express it more in whatever you do. It's time management, but it's easier to see yourself like that because one role doesn't remove from another role when your core values are expressed through all of your roles.

That notion of integration, we have to articulate it for student life. You can put on hold some activities for a little while that you regain as hobbies. I used to do karate and I was very much into music. When you're in residency and you're on call, you give up a bit of that, but you can pick it up later. For every generation there's more and more drift towards values that are more material than are psychological and spiritual. The aspect that they are of the more superficial self keeps increasing. Therefore, more dependency on external factors such as money and looks, results in adding an external locus of control to wellness. It's why students have been more anxious in the last few years. Some of the specialties are chosen for more superficial reasons, which moves away from the internal locus of control and intrinsic values to more extrinsic attachment.

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### CAN YOU TELL US MORE ABOUT THE FACULTY'S PARTNERSHIP WITH JIAO TONG UNIVERSITY (SHANGHAI)?

We had been on a specific path to internationalization since 2007, using a preferred partner, joint investment tactic. We began with Université Paris-Descartes. By 2011, we questioned ourselves whether we should look for partners in the BRIC countries (Brazil, Russia, India, China). In 2011, Professor Daniel Figeys (a Tier-I Canadian Research Chair) suggested that we look into China. "I've been going there since 2006 and they are investing heavily into research." [Dr. Figeys] was at a meeting and they liked what he did and they [built him] a laboratory. They knew him well and [invited] him to come and explore more possibilities in China. So, in October 2011, a small delegation, including myself, the Chair of BMI [Biochemistry, Microbiology, and Immunology] at the time, Daniel Figeys, and the Vice-President of Research for the university, Mona Nemer, went to Shanghai. They knew Daniel, so they hosted the dean. At the end of the evening the vice-dean international, Zhang Yong (of the Shanghai Jiao Tong U Scholl of Medicine, SJTUSM) sat right beside me and he says, "bonsoir, monsieur doyen." in very good French. He said, "I didn't know you spoke French in Ottawa." So I said, "I didn't know you spoke French in Shanghai!" It so happens they have a French medical stream in Shanghai. This was another point of affinity we had in addition to medical research between uOttawa and SJTUSM.

[At that time], we were looking for a preferred partner, with whom to invest jointly, not to profit from. The fit was really good. It so happened that they were also looking for a preferred partner and we didn't know. They were discussing with some Ivy League school in the USA and with some Australian ones. But the relationship between us and SJTUSM evolved really well and the whole thing gelled. We also had strong interest from both of our countries to see a strong partnership created. Thus, we put \$1 million on the table and asked if they would match it for a \$2 million joint research program, in basic science and medical education and that was the first MOA (memorandum of agreement). We signed it with the Governor General when he was doing his tour in China, the mayor [of Ottawa, Jim Watson] was doing his tour, and the NAC (National Arts Centre) orchestra [was there]. In that MOA, right before going to Shanghai to sign it, literally the few hours before I'm embarking on the plane, [I noticed that] they added one last bullet: We want to open a medical school with you. So, I asked my contact, "are they serious?" and they said, "they put it in there. They're serious." The anecdote is that soon after we signed the MOA, on the Saturday afternoon, they told me: "you are very busy and you're going back home on Wednesday afternoon, but in the morning you have an hour and a half. Let's plan a medical school. An hour and a half is plenty of time!" So, Dr. [Melissa] Forgie and I show up there on the Wednesday morning. They said, "we want to build a medical school with you." And I said, "Well, what exactly do you want?" And they said, "we want it in English." I said, "Why don't you

use our 4 year curriculum? Why don't you put it accreditation ready from the start? Why don't you send a few teachers here to see what we do and do shadowing?" They liked it and in an hour and a half we had the whole thing planned. Then in January, two professors show up at my door here [in Ottawa], "we're here to shadow!" They were here for 6 months and [that's how] the whole thing got going. Several months later the joint school called the Ottawa-Shanghai Joint School of Medicine was approved by the Shanghai and the Central China governments and it was officially opened in October 2014, in less than a year.

### REFERENCES

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