"Being Good at Question-Asking Is a Transferable Skill"

Nicholas Diamond

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Abstract In our interview with Nicholas Diamond, he shares his journey from cognitive neuroscientist to behavioral scientist in Canada's federal government. As Nick was finishing his PhD investigating human memory and aging, he planned to continue climbing the academic ladder, envisioning becoming a professor. Through postdoctoral experiences and a broadened perspective, Nick realized academia did not hold a monopoly on meaningful scientific work. He now applies his research skills to policy issues like COVID-19 and misinformation. While unsure of his future path, Nick embraces uncertainty and finds satisfaction in his current role.

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Chris: Can you introduce yourself and tell me a bit about your current position?

Nick: My name is Nicholas Diamond. Most people call me Nick. At the time of writing (Fall 2022), I'm a Behavioral Science Fellow in the Impact and Innovation Unit (IIU) in Canada's federal government.

Since starting this job just over a year ago, I've been working mostly on COVID-related projects. I do research on Canadians' pandemic-related behaviors, beliefs, and attitudes, with the goal of improving policy decisions and outcomes, and identifying potential challenges. I design online surveys and experiments, conduct hypothesis-driven and exploratory analyses with large datasets, and help guide the development of our research programs. One area I've focused on is misinformation and its links to trust in public institutions – understanding how individuals' trust and information consumption shape health (and climate-)-related behaviors, how the proliferation of verifiably false information affects public health choices and policy outcomes, and how government communications and processes can be made more trustworthy and transparent. The ultimate goal is to identify, test, and scale up individual- and systems-level solutions.

As an example: here is a public report on an experiment my teammates and I ran (in collaboration with the OECD and the French government's behavioural insights team) to understand what drives misinformation sharing on social media, and assess the potential impacts of two light-touch, platform-level interventions adapted from the scientific literature: https://oecd-opsi.org/publications/behavioural-science-tackle-misinformation/

This work is embedded in several different large-scale longitudinal and cross-sectional data collection efforts that serve multiple policy purposes. I wrote a blog about my work in the IIU here: https://medium.com/impact-canada/on-becoming-a-better-scientist-and-a-bigger-nerd-in-the-public-service-e10bdb9bc46a.

What was the focus of your PhD?

I did cognitive neuroscience research investigating human memory, its neural underpinnings, and how it declines in older age. This was in the Psychology Department at the University of Toronto. I worked with Dr. Brian Levine, in his lab at the Rotman Research Institute at Baycrest Health Sciences. I focused in particular on *episodic memory* – our ability to mentally jump back in time to specific past experiences spanning our life history – which I found to be extremely cool and mysterious.

A big focus of my research was on developing new ways to rigorously experiment on human memory as it manifests in the real world, beyond the artificial constraints of typical psychology laboratory studies. This involved some unusual stuff – e.g., designing immersive experimental "staged events" in places like a hospital or at the Ontario Science Centre and then testing different elements of people's memory (and their corresponding brain activity) for these experiences after delays of minutes to years. Towards the end of my PhD, I got especially interested in memory search dynamics – how we mentally jump through time and space to past experiences, why one memory brings to mind another, and so on – and how these dynamics come apart in older age. I used functional magnetic resonance imaging (fMRI) and magnetoencephalography (MEG) to understand these dynamics in the brain, but was fundamentally most interested in cognition and behavior.

As you were finishing your PhD, what were you thinking about your career plans?

The short answer is that I had no idea what I should, or could, do next. The same was true when I was finishing my undergraduate degree some years earlier. My life has largely been a series of lucky coincidences.

The long answer is that I loved doing science and thought I therefore ought to try to become a professor. Or more honestly: I was enjoying the game I was playing, so I wanted to keep playing it until I got kicked out or it stopped being fun. I don't remember how much I actually wanted to be a professor per se, or whether I had even carefully imagined what that life would be like. It was not a childhood dream of mine. I just thought – probably more by virtue of inertia and social influence than by active planning – that I ought to climb up to the next rung in the ladder: postdoctoral research.

I reached out to a few scientists I admired, working in cities that seemed interesting, to ask about joining their lab as a Postdoctoral Fellow. My partner was doing the same – we were trying to land positions in the same city. It was stressful (one wrinkle: she was/is much more talented than me). But it worked out. We both got positions in exciting labs in Philadelphia, me at University of Pennsylvania. It wound up being a very chaotic couple years in Philly (e.g., COVID, immigration quirks, some postdoc disappointments), but it was a great time overall.

How have your career plans changed as you've continued on to your current position?

I was uncertain about what my professional future would look like when I was in academia, and I am still uncertain now. But my career outlook has changed. I have a richer picture of the space of possible future careers now, and I've transcended some small-minded ideas I used to hold: for example, that I had basically no good job prospects outside academia, that non-academic work must be comparatively uncreative and inflexible, and that you have to be in academia to ask your own big questions, use data and experiments to answer them, read and write scientific papers, talk nerd-stuff with nerds, and exchange ideas at international conferences – I do all these things in my current job. Among other things that are totally new to me, of course. Frankly, some of the things I loved about academia, I can enjoy more freely now than when I was a postdoc. This has been a pleasant surprise.

Now, I'm wary of being disingenuously ra-ra positive about work outside academia. It is very easy to view one's current job and life circumstances through rose-colored glasses and their prior trajectory through oatmeal-colored glasses. This comparison in particular – academic vs. non-academic careers – can get pretty emotionally charged (at least on Twitter, which surely must be an accurate picture of real life), and I think it's often silly. Based on my (limited) experience and social connections, there is as much variability in people's satisfaction with their careers *within* each of academia and non-academia as there is between them. The challenge isn't choosing which of these two distinct lanes one should occupy for life – it's realizing what your priorities are and then balancing them, living with the consequences of often arbitrary life choices, and figuring out when and how to make a change.

So: No job is perfect. I've just…relaxed a bit. Or matured, maybe. I hope I get to sample all kinds of interesting and useful careers, if I am lucky enough to be conscious for a few decades more. I've realized the nature of the work, and the people around me, is more consequential than the type of institution in which I find myself. And, of course, feeling in control of my career destiny and in control of where I live – these things felt elusive when I was a grad student and postdoc, and now they're priorities.

Can you tell us a bit about what day-to-day life is like in your current position?

It varies quite a bit, but in a nutshell: I design online surveys and experiments, analyze data, visualize and write up findings for various audiences, and deliver presentations. This involves the usual ambient scientific work: brainstorming, reading papers, writing data analysis code, learning about statistical methods, discussing

with teammates, etc. This is punctuated by all kinds of communication and knowledge exchange opportunities: meeting with folks in various government departments and agencies, non-profits, and academics. On an average day, I have a couple meetings, I write some code, I might skim a relevant paper, and I might discuss priorities and next steps with teammates. I craft lots of decks – slide decks, that is – with teammates. Sometimes I work independently; sometimes I collaborate in real time with colleagues. Sometimes the pace is steady, sometimes it's a mad dash (it feels fast, by comparison to academia). The output of the work takes many forms: talks presented to government decision-makers or other research groups, evidence-sharing products, policy briefs, academic products (scientific manuscripts, book chapters, and conference presentations), etc.

Work was totally remote when I was hired, though we recently moved to a hybrid model. Before the pandemic, this job would have required that I move to Ottawa, Canada's capital (I live in Toronto). At the moment, there are people and government office spaces in various places across the country.

What do you like most about your work?

My teammates and leaders are fantastic. There's a great mix of (A) appetite for ambiguity in the pursuit of ambitious and complex goals and (B) drive to make evidence-based real-world change happen effectively and efficiently.

It's also been great to be granted the opportunity to build expertise on a set of topics that are different from my prior academic work. And I know the work will continue changing over time to address changing challenges in the country and the world. I've enjoyed that – some time and space for some deep long-term projects, mixed in with urgency and external pressures to keep the work fresh and useful.

And what do you like least about your work?

The government is very big and complicated and hierarchical, which can be confusing and annoying. Also, I don't know how much career growth potential there is above me, in this kind of hands-on scientist role that I am enjoying.

Also – saying that you work for the government plays less well at a party than saying you're a neuroscientist/memory researcher*. The stories we tell ourselves and each other about what we do are not the same as what our job actually feels like on a given Tuesday, but stories do matter, and I've had to come up with a new one. That's been inconvenient.

*I don't actually go to parties.

How do you think having a PhD has helped you succeed in your current position?

Being able to look at a problem and ask a good question – one that is consequential, novel, interesting, and answerable – is very useful. Being able to answer that question is even more useful. My PhD training prepared me to sit with big and complicated topics, boil them down to actionable questions, and devise clever new empirical ways to answer them. That's helped me in my current role, where my teammates and I are wrestling with big questions related to mis- and disinformation, trust, democracy, collective behavior, systemic inequalities, etc. Being good at question-asking (and its precursors like literature review, statistical literacy, etc) is a transferable skill. It also opens the door to developing new interests and passions, quickly.

   More pragmatically, my PhD training helped me get reasonably good at each phase of the academic scientific cycle – literature review and problem scoping, survey and experiment design, data analysis and visualization, synthesizing key insights, and communicating those insights clearly. Outside of academia, my impression is that most jobs and skill sets are more siloed. It's useful to be able to do work "nose to tail" like this (sorry for the gross metaphor) – or to flexibly plug in to one phase or another as opportunities arise.

   Finally, PhDs (and postdocs) afford people the opportunity to go really deep on certain skills or topics. For example, I was and am obsessed with pretty data visualization and have lots of experience doing multivariate statistics. This let me contribute in a specific way when I started my job, given the massive volumes of valuable data my team had collected. As a second example, I cared a lot about public speaking in academia – giving compelling and visually interesting presentations on my own work, or as a lecturer. Over the years, I gave many talks to all kinds of audiences. I'm pretty comfortable talking to most audiences now, which has helped me.

If someone currently finishing their PhD was considering a position similar to yours, how might they decide if it would be a good fit?

If any of this sounds interesting to them, I suppose. If you like the idea of doing scientific work aimed at real-world issues (which means more teamwork, more changing priorities, less control, and less focus on papers and personal brand compared to academia).

   You can always reach out to people who have jobs that are interesting to you and see if they'll answer a few questions. But, don't put too much weight on what any one person says. These kinds of interviews and conversations are great resources, but everyone – including me – is an unreliable narrator about their life and career path.

If someone was interested in pursuing a similar career path, what would you suggest they do to better prepare themselves?

Become the best scientist you can on whatever topic interests you most, but try to build generalizable skills and maintain an interest in big picture, real-world questions beyond the minutia of your field. Read widely. Be a good collaborator. Produce things that people can see.

My *not knowing what I would eventually do* was a key part of my path, in retrospect, so: embrace that, if that applies to you, and trust you'll wind up doing something cool if you work hard, be a nerd, and be kind.

A lot of people like academia because they feel it gives them an opportunity to work on a topic that they deeply care about. Do you think this is also true in your current position?

That is mostly true for me. I think that is partly due to luck and partly due to me choosing to be malleable. Also, I think this is a sneakily deep question, so please forgive a self-indulgent rant:

Why do you care about what you care about? "Caring" is more elastic, and active, than is usually implied. I cared extremely deeply about memory as an academic, and still do. I still gladly work on some lingering PhD and postdoc papers in my free time. But before graduate school, I didn't care about memory science at all. In fact, I found memory to be one of the dullest topics in my undergrad psychology and neuroscience courses – the field seemed full of boring box-and-arrow models about mental storage units and rats in boxes studied by people who respected rats too much or humans not enough. Not exactly the deep exploration of the nature of human consciousness that I was craving as a weird 20 year old. When I initially decided to do my PhD with Dr. Brian Levine, it was to do research on traumatic brain injury.

So – why did I come to care about memory so much? It was probably a combination of: getting the opportunity to explore complex questions for long periods of time, feeling the work was important, engaging with a community of people dedicated to exploring these questions collaboratively and competitively, having good advisors that supported me, building new skills, feeling I was professionally progressing, and building a social network of friends with similar interests.

I am lucky enough to have much these ingredients much of the time in my current role, and accordingly I do care deeply about the interrelated topics I work on now. I also care more about applied research impact now, and public policy, and…Canada. It's my job, so I get to care about this stuff. I do think I got lucky though, to land in a role that gave me some space to choose my area of focus early on. I think I also created some space for myself *by* caring so much about certain projects and questions – if you sink your teeth into something relevant enough to

your work, and produce cool and useful stuff, my experience is that people won't tell you to stop. You can bend the work towards you.

Do I care about these new topics the same way I cared about memory as a grad student and postdoc? Maybe not. I haven't been doing this as long, and I'm also not a 20-something grad student any more. Transitioning out of academia, there was definitely some whiplash from changing topics and cultures so dramatically – to be working on *anything* besides memory. But very quickly, it felt like a pretty sweet privilege to be given the opportunity to become a nerd about some totally new topics. Caring about new stuff doesn't make you care about old stuff less. Not to mention that I feel much more headspace to care about things beyond my day job now.

I leave it to the reader to decide whether this is all useful and genuine, or hollow platitudes and self-deception. If you know the answer, please email me.

Another reason many like academia is that they feel it provides them with more freedom than they think they would get in other positions. How much freedom do you feel you have to work on what you think is interesting?

Lots, but not as much as in academia. I'm one member of a team trying to get big things done, reasonably quickly. My current job is also much more tethered to changing problems and priorities than my academic job was, or would be. Basic research in academic psychology, by comparison, can be very intellectually free – some people are so free they can spend decades studying things that don't even exist *mentally*, like schemas and short-term memory systems (just joking).

I often felt a lot of freedom as an academic, probably peaking in late grad school, but again, it's complicated. When I eventually wrote a research statement for a faculty job application, my postdoc advisor told me my research program was too broad and varied, and he was right. Grant commitments, intellectual inertia, incentives to build a cohesive and incremental research brand, external demands for reviews and academic service activities, and constraints from the personnel and technical resources at one's potentially lifelong department – there's no free freedom, even in academia. That's not a bad thing, that's just life. It's constraints all the way down. Constraints are good.

And then of course there are other aspects of freedom – freedom to choose where you live, to draw truly clean work-life boundaries if/when you'd like, to move throughout one's career, and to sample different roles and topics. Everybody needs to weigh these priorities for themselves.

I like to think about parallel universes when making big life choices. Every alternative life path exists in a universe somewhere, I've heard. In the universes where I stayed in my postdoc and maybe eventually became a professor, I'm probably doing experiments on episodic memory (a topic I randomly stumbled into when I was 22 years old) until my department kicks me out in my mid-70s. I bet it's a wonderful

life, filled with great colleagues and mentees (and AI-robot assistants on Mars). In those universes, do I have more or less freedom than my life in this universe? Ask me in ~40 years.

Have you thought about returning to academia?

Of course. I've also thought about trying to be a professional funk guitarist.

Based on your journey, what advice or suggestions do you want to pass on to someone who's currently finishing their PhD?

I hope you're enjoying this time, it's pretty special. Be honest about what excites you, and don't get too caught up in other peoples' hype or cynicism. Try to notice what kinds of work bring you the most satisfaction in the moment and what kinds of people you enjoy working with. Make sure you start working on your hips and glutes if you're not already, otherwise you'll get lower back pain in your 30s. And remember that we're all going to die.

Thank you for sharing your experiences with us, Nick!