Female Academics: Volume I

Scott Douglas Jacobsen

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To women with an impact in personal life, good and bad, for the thorough lessons in various aspects of the human experience; and specific appreciation for approval provided by Dr. Janet Metcalfe, Dr. Neda Kerimi, Dr. Adele Diamond, Dr. Maryanne Garry, Dr. Rakefet Ackerman, Dr. Gira Bhatt, Dr. Diana Sanchez, Dr. Miriam Erez, Dr. Carla MacLean, and Dr. Elizabeth Loftus to conduct and publish these uncensored and enlightened interviews, especially for an unknown and random undergraduate, some time ago.

Biographies

1. **Dr. Janet Metcalfe** earned a B.Sc. and Ph.D. from the University of Toronto. She did postdoctoral work at the University of California, Los Angeles. At present, her research is on how people know what they know. In other words, their metacognitive abilities, i.e. if they can use their evolutionarily unique metacognitive abilities for self-control. Her lab has been studying peoples' abilities to make judgments of their own learning. This research focuses on the theoretical perspective that proposes that they are able to hone in on their own Region of Proximal Learning, which are things that yield maximum learning payoffs. Their efforts in research are directed at specifying the heuristics of how people isolate this region. By doing this, they investigate what it is that people choose to study. However, it is also necessary to investigate whether what they choose to study is advantageous or not. Of course, the limitations in human metacognitive judgments figure large in this research program.
2. **Dr. Neda Kerimi** received her Ph.D. from Stockholm University in Cognitive Psychology. After her Ph.D., Dr. Kerimi worked at The Judgment and Decision-Making Group at Uppsala University and now she is a post-doctoral fellow at the department of Psychology, Harvard University where she conducts research in social psychology. Her research interests include decision-making, happiness, risk as well as Human-Computer-Interaction. Additionally, Dr. Kerimi is the news editor of the European Association for Decision Making, organizer of the bi-yearly networking event at SPUDM, and editor of the Indecisionblog.com. Besides being a self-confessed tech-geek, she loves useless facts and futurist science.
3. **Dr. Adele Diamond** is the Canada Research Chair Professor of Developmental Cognitive Neuroscience at the University of British Columbia, Vancouver. She is a Fellow of the Royal Society of Canada. Dr. **Diamond** is at the forefront of research on 'executive functions'

(EFs). EFs rely on prefrontal cortex (PFC) & interrelated brain regions, & include being able to 'think outside the box' (cognitive flexibility), mentally relating diverse ideas & facts (working memory), & giving considered responses rather than impulsive ones, resisting temptations & staying focused (inhibitory control, including selective attention). Her lab examines fundamental questions about how PFC & EFs are influenced by biological factors (genes & neurochemistry) & by environmental factors (for ill by poverty or stress & improved by creative interventions & programs). She has a track record of discoveries that have improved treatment for medical disorders (PKU & ADHD) & impacted early education, improving millions of children's lives.

4. **Dr. Maryanne Garry** is a Professor in Psychology at Victoria University, and the Deputy Dean of the Faculty of Graduate Research. For nearly 20 years, she has studied a puzzle of memory: how is that otherwise intelligent, rational people can remember things they never really saw, or experiences they never really had? Professor Garry's interests in applying science to the law predate her interest in memory research or even in psychological science. Her undergraduate degrees are in Forensic Science and Chemistry. Professor Garry received her PhD in 1993 from the University of Connecticut, and did postdoctoral research at the University of Washington under the direction of Professor Elizabeth Loftus, the world's foremost researcher on human memory distortions. She started her position at Victoria in 1996. She is best known for her work on the perils of imagination as a therapeutic technique; the effects of completely inert substances such as fake alcohol or fake cognitive enhancing drugs; and the impact of photographs on memory. Professor Garry's research has appeared in many prestigious international journals and books, and is widely cited both in her own discipline and in the allied disciplines of law and clinical psychology. Professor Garry has

worked with the Law Commission, the Crown Law Office, the New Zealand Police, and she has acted as an expert witness in several countries, commenting on the reliability of human memory in criminal and civil trials. She is also the co-director of the Innocence Project New Zealand, and has received numerous grants; her university's Merit Award for Excellence in Research; the university award for Excellence in Teaching; and the Neag Distinguished Alumni Research Award from the University of Connecticut. She was elected Fellow of the Association for Psychological Science in 2005. She serves on the Editorial Board of Applied Cognitive Psychology, and in 2008, she was elected President of Governing Board for the Society for Applied Research in Memory and Cognition, the first person from outside North American to hold that office.

5. **Dr. Rakefet Ackerman** is an assistant professor at the Faculty of Industrial Engineering and Management at the Technion—Israel Institute of Technology. Her research deals with the cognitive processes of learning, question answering, and problem solving. Her studies follow the metacognitive approach, by which subjective assessment, or monitoring, of knowledge guides the actions people take to achieve their goals. Understanding the factors that affect the reliability of metacognitive monitoring and the associated efficiency of task performance offers a foundation for developing effective study and work techniques. Before her academic career, Dr. Ackerman worked in the hi-tech industry as a leader of software development teams.
6. **Dr. Gira Bhatt** is a researcher and an educator with a Ph.D. in Psychology from the Simon Fraser University, BC. Canada. Currently she is a faculty member in the department of psychology at the Kwantlen Polytechnic University. She is the principal investigator and the director of a federally funded (Social Sciences and Humanities Research Council)

Community-University Research Alliance (CURA) project. The goal of this $1 million, 5-year long project is to address prevention of youth violence and gang involvement using strength-based approach and community engagement. This project has brought together a team of seven academic researchers, four academic institutions, and 11 community partner organizations (www.actingtogether.ca). As the project director, she oversees multiple research streams (three qualitative, three qualitative), training and education of youth, academics, and members of the larger community, and knowledge dissemination through academic and popular media. Additionally, besides her regular teaching commitments at the Kwantlen Polytechnic University, Dr. Bhatt supervises the practicum component of the applied degree in psychology whereby she connects undergraduate learners with potential employer hosts with whom they train for a career of their choice. Also, she is the board member and secretary of the International Relations Committee of the Canadian Psychological Association.

7. **Dr. Diana Sanchez** received her Ph.D. from the University of Michigan in Women's Studies and Social Psychology in 2005. Currently she is an Associate Professor of Psychology at Rutgers University – New Brunswick and the area coordinator for the Social Psychology program. Her current publication lists over 40 peer-reviewed publications and over 30 national and international presentations. In addition, she received an early career award from the Society for the Psychological Study of Social Issues and a fellowship at the Russell Sage Foundation. Her work has also been supported by several agencies including the National Science Foundation. The social psychological study of stigma, self/identity, and social issues represent the overarching themes of her research. She has pursued these topics in two separate lines of research (1) the racial and ethnic identity and categorization of atypical

minorities such as those who are racially ambiguous, multiracial, or multicultural and (2) the stigmatizing nature of gender norms with a special emphasis on the consequences of stigma for women's health and close relationships.

8. **Dr. Miriam Erez** is a professor in Management and Organizational Psychology, Faculty of Industrial Engineering and Management, Technion, Israel. Erez is currently the Vice Dean of the Technion MBA program; the Chair of the Knowledge Center for Innovation; the Chair of the National Council for the Promotion of Women in Science and Technology and the advisor of the Technion president on the status of women. She is also Director at Hi Center (the incubator of Haifa municipality) and at Haifa Economic Society. She served as faculty dean between 1996-1999. Prof. Erez's research has evolved around three major topics: innovation, cross-cultural organizational behavior and work motivation. Prof. Erez has co-authored and co-edited five books, more than 90 journal papers and book chapters. Erez appears among the most cited authors in the field of management, 1983-2004 (Podsakoff, N.P., et al., *J. of Management*, 34, 2008, 641-720, Table 9)**.** In 2002, she received the **Distinguished Scientific Award** of the International Association of Applied Psychology.
9. **Dr. Carla MacLean** works as a Psychology Instructor at Kwantlen Polytechnic University. She earned a Bachelor of Arts from the University of Victoria, Masters of Science from Saint Mary's University, a Ph.D. from the University of Victoria, and completed a Post-Doc. at Simon Fraser University. Her research interests lie in "social influences on decision making and memory; Confirmation bias/tunnel vision; Correspondence Bias; Investigative interviewing techniques." Her work is on the "nexus between occupational safety and forensic psychology." Additionally, her recent research "tests methods to minimize the effect of bias in investigator decision making."

10. Dr. Elizabeth Loftus Dr. Loftus is #58 on the listing of the most cited psychologists, and the most cited female on the list. Her current position is Distinguished Professor of Social Ecology, and Professor of Law, and Cognitive Science at the University of California, Irvine. Dr. Loftus earned a double major in mathematics and psychology at University of California, Los Angeles, and her MA and Ph.D. in Psychology from Stanford. For research interests, "her experiments reveal how memories can be changed by things that we are told. Facts, ideas, suggestions and other post-event information can modify our memories. The legal field, so reliant on memories, has been a significant application of the memory research. Loftus is also interested in psychology and law, more generally."

Preface

Female Academics: Volume I converges from four directions. First, personal interest in *international* women's rights. Second, a curiosity about individual stories. Third, one personal year committed to interviews in a series devoted to female academics entitled *Women in Academia* in the non-refereed journal *In-Sight: Independent Interview-Based Journal* (ISSN 2369-6885) in the culmination of three issues - over seventy-thousand words. Fourth, an opportunity to collaborate with the University of California, Irvine's (UCI) Interdisciplinary Center for the Scientific Study of Ethics and Morality (Ethics Center) under the deep knowledge and high ability leadership, mentorship, supervision, and tutelage of Professor Kristen Renwick Monroe in the Department of Political Science and Philosophy from the School of Social Sciences based on the recommendation of the strong mentee of Professor Francisco Ayala, Associate Professor Mahtab Jafari. While in Irvine, California at the UCI Ethics Center, Professors Monroe and Jafari mentored me. Professor Ayala had coffee with me. Lastly, I mentored Professor Jafari's son, Matin. A bright, diligent, and kind young man.

Professors Monroe and Jafari remain highly intelligent and competent guides for me. I had, and have, a lot to learn from them, especially in their patience with me. Professor Monroe on issues of scientific ethics and morality, international women's rights, and their relationship to the university system or Academia with an emphasis on the American university system and in STEM education for women. Professor Jafari in terms of insights from a woman's perspective, which I do not have first-hand and found enlightening from her. Numerous coffees, lunches, and discussions provided the necessary insight for me. In preparation for a more comprehensive production, *Female Academics: Volume I* amounts to a small publication to represent some of the work involved with this continued endeavor.

The modern women's movement built into the academic system amounts to three streams: opportunity, representation, and outcome – as far as I can tell. The first two seem the most direct goals with outcome as the unification factor among them. Equal opportunities aim to open doors for women. Every academic door with the possibility available for women to enter without the traditional, or modern, glass ceilings in their way. Those desiring equal representation aim for the ratio to be 1:1 between men and women in all fields of the university system. All levels, all disciplines, all sub-disciplines, with equivalent ratios. Those wanting equal outcomes are taking a long-term view with continual upkeep of the balance over time. In that, eventually having equal numbers of men and women in each academic sector, and then having this renewed over time.

Of course, we have the dual-problem in the international context with boys, and young men, in terms of poor academic performance and low completion rates from kindergarten through grade 12 into undergraduate and graduate school with magnified effects on "men of color," or "male minorities," in The United States of America and Canada, for two instances, and the representation of professional women in various sectors, for example, academic, corporate, economic, social, political, and so on, in addition to the deep concerns, for many, including me, related to pervasive violation of their fundamental privileges and rights as human beings. A male crisis in education, or in general adaptation to the rapid alteration in the personal and professional landscape, continues on a global scale as reported in numerous venues. Both perspectives compatible, logically and in actuality. Most emphasis appears on one sex, or gender, or the other in times of rapid change such as the present era, or the early 21st century. Even so, to cover the aspects of these socio-political and economic shifts would require an enormous volume devoted to the issue with numerous levels of analysis, the focus of this short volume represents a

specific endeavor to interview a small sample of female academics not "because female" but as "important academics with interesting research, whom are female." An important distinction based in conversation with Professor Elizabeth Loftus at a separate time than the interview and the research time in Irvine, California, a coffee in between the two events.

Many, many individuals – men and women – no longer alive took part in this journey for equality. Dead and forgotten, not even remembered in name, men and women; earlier productions discussed these topics in *In-Sight: Independent Interview-Based Journal*. Each issue of the journal comes with an introductory *Letter of Appreciation*. A lot of individuals help behind the scenes for the construction of the journal, the essential gears in the proverbial clockwork. The *Letter of Appreciation* for *In-Sight Issue 2.A, Idea: Women in Academia* stated:

> *Insofar as we inherit the legacy of previous generations' transgressions through implicit biases and explicit reinforcement of these biases, once conscious of them, we own the option to override these assumptions through changes in personal thinking, behavior, organization of groups and collectives, and the legal codes and public policy that function to shape the overarching attitudinal and behavioral trends of the culture. This may sound arrogant or idealistic arising from the mind of an undergraduate, but I see the unprecedented rise in women as such a phenomenon counter to the past, which requires new frameworks for understanding and functioning in contradistinction to older ways. I can assure you in full confidence to any claim of arrogance and idealism with a resounding, "Both." I understand the lack of power in my hands, but I recognize an internal imperative to do my part. In other words, I see the responsibility to contribute*

my part to progressive ideas in concrete terms within the context and constraints of my current position. [1]

With respect to current developments in professional and personal life, my personal sensibilities continue forward with the same intent and force from this statement whilst rejecting the comedic notion of "arrogance" taken in its literal meaning, but rather to soften the mood for the serious material because, as far as my rationale and emotive force concern this issue, these remain important, unprecedented, times for women in every nation. A pragmatic sense of global ethics necessitates consideration of comprehension about one's "lack of power" and, therefore, the limitations of one's extent of influence. In that, my efforts, by necessity, must remain limited by a lack of influence, which does not diminish personal responsibility to issues of concern to me. Women's progress matters. However, my idealism, bolstered and bounded by realism, did not waver in any respect since the beginning of this decision to pursue this course. Do not take this as proselytizing, but as a consideration; if one summarized this production in a phrase, it would be as follows: "please consider the following." Nonetheless, please think for yourself on these matters and come to personal tentative conclusions based on the reasoning and its apportionment with the evidence external to this production, or utilize the data provided by female academics, these female social scientists, apart from the arguments and the international and national context as interesting personal stories.

Scott Douglas Jacobsen

[1] Please see Jacobsen, S.D. (2013, August 5). In-Sight Issue 2.A, Idea: Women in Academia. Retrieved from https://insightjournalonline.files.wordpress.com/2012/08/in-sight-issue-2-a-idea-women-in-academia-part-one3.pdf.

Social Sciences

Dr. Janet Metcalfe: Professor, Psychology, Columbia University

June 1, 2014

1. **In terms of geography, culture, and language, where does your family background reside? How do you find this influencing your development?**

   I grew up in Toronto. And I think being a Canadian and having a good educational system is a very good thing for everyone, which is not as accessible here in the US as it is there.

2. **What motivated an interest in science and the mind?**

   I have always been interested. In high school, I was one of those nerdy kids in the library reading Aristotle and Plato. But I was very naïve. I did not realize that there were actually people studying those kinds of issues in the universities. It was not until much later that I realized I could actually do that with my life and not become a sales clerk, Lawyer, or some other field.

3. **How did you find your early study and investigation into the human mind?**

   The first couple years, I was doing theatre design at the nationale in Montreal as a designer. Theatre design is pretty wonderful from the outside. From the inside, you have to be extraordinarily talented. It is also very political. You have to be so amazing. I am in awe of people who can do it. You also have to starve for a long time to do it. The odds are very, very against you. I ended up doing a B.A. in costume design in Ottawa. And doing the odd show in Ottawa, working in my spare time with a children's program, and I loved being with children. It was so great. They were kids from Lower Town, Ottawa. There aren't many

slums in Ottawa, but I would not say this is a slum. However, I would not say these kids were privileged. I would take them around to all of the various cultural events to try and give them an opportunity. Then I realized that I really loved doing that. I decided to go back to school and do things in learning. I had to do my learning course at Ottawa. It was Behaviorism, but it was with rats and stuff. So that was out to sleep. I wanted to work with kids and know how they learn. Because we did not know; we still do not know. (Laughs) We know a bit more. We did not know how to teach them. I was pretty convinced that the kids in Lower Town, if they could just get their grades up in school, then they would be on track. That would be their ticket. I went back to the University of Toronto. I started school again.

I sat myself in, although I did not know it, but the University of Toronto and Stanford were the centers of memory research. I took a class and the professor–Bennet Murdock– asked, "I need a research assistant. Just come to my office if you want to be a research assistant." I went with ten other people. He decided simply on grades. That was me. So I got the position because I had the highest grades. So I was his research assistant. It was amazing! Because he was studying memory and the minds, how we think, and mathematical models of memory, I was put in, as an undergraduate, put in with his postdocs and Ph.D. students. It was fantastic! He's been my mentor ever since. He's still in Toronto. He's 92. I still see him from time to time. It was such luck. At the University of Toronto, there were so many great people at the time doing such wonderful, great research. So I lucked into it. It was fun.

I applied to two schools for graduate school: York and Toronto. I really wanted to go to Toronto. I didn't know, but people later told me that I'd get into Harvard. But I was a Canadian! (Laughs) It didn't occur to me to go anywhere else. It didn't matter to me because I got into Toronto and it was a great place. It was very lucky for me.

4. In terms of working in the academy as a woman, how did you find your early studies, research, and work? Have things changed?

Yes, it is interesting. I was in Canada during my early time and I think there was a lot less discrimination in Canada than in the US at the time. I later taught both at Dartmouth and currently teaching at Columbia. I could not have been a student at either of those places. In Canada, there was a tradition and some wonderful women in the department already. Well, there was one time. I had a baby in graduate school while I was doing my Master's thesis. My Master thesis was published. Usually they were not published, at least at University of Toronto. Mine was published. It was a very good thesis. They had a prize for the best thesis, but they gave it to a guy. They said that they gave it to the guy because his wife had a baby.

That was the only time I thought, "My thesis was better than his was. And it was because his *wife* had a baby! (Laughs) I was writing this while in the hospital." There were times when it was very rarefied. I was in the Society for Mathematical Psychology, where there were very few women, okay. I did not feel discriminated against. There was simply a lack of women in it. I think it is pretty transparent. I think some of the women now helping

women to have self-confidence, and not take personally rejection letters, are doing a great service. I do not think it has gone away. But Canada was no so dead. Because there were some women in the department already, they had some pretty strong women there. I remember one woman there in her 60s. She had been in the field for a long time.

5. What do you consider your greatest emotional struggle? How did you overcome it?

Well, it is pretty hard having a baby, getting a thesis done, and having my whole salary going into my baby. It was a conflict between career and family life. It is hard being an academic with a family life fighting for tenure. I think women more than men have more assumed responsibility for children than men. There is a biological clock. This usually becomes an issue when you are coming up for having a child and going to compete for jobs and tenure. That is when your children need you the most too. It is *very*, *very* hard. I think we should do a lot more. People helped me! When I was a post doc at UCLA, Elizabeth Bjork was on the board of directors of the Wesley Presbyterian Nursery School, which is a couple of blocks from the lab. It was a great nursery school. She negotiated on my behalf so I could get free childcare there. I got to see my kid all the time. I got to know the other kids. And I got free tuition. She totally ran interference for me. It happened again and again in my career. People helped me a lot. We need to help people a lot. We need to help women a lot. It makes their life possible.

6. Your current research focuses on peoples' metacognitive abilities. In particular, the use of metacognition for self-control. How do you define metacognitive abilities? What

have you found with your research on metacognitive abilities since around 2010 onward?

I have been focusing on agency. On people's sense of doing what they're doing. I have been really focusing on metacognition and agency. I think this is an absolutely fascinating problem. How do I know that I am me, right? So we created a little computer game lovingly called space pilot. There are Xs and Os all over the screen. You move the cursor to catch the Xs. We can intervene in things such as noise into the system and time delay into the system. We can ask people what the performances was like – what is called straight metacognition, "How in control did you feel?" We are finding that there are very dramatic differences *and* similarities in this judgment of control, knowing when you are in control. For example, people who have schizophrenia do not have control. They can judge the performance. So there's straight metacognition is okay. There is judgment is okay. But they do not know if we have intervened. There are a whole lot of consequences, I think, in their real life, if they cannot judge real life – if they cannot judge what is coming from the external real world. It is very central for their ability to get around in the real world. People with Asperger's have some problems too. For example, they have problems with self-boundaries. We have found some interesting glitches. They will take credit for magic. Other undergraduates will not take credit for magic. If it is good and it is kids, it is because of them. There are these very interesting differences.

We have put participants in brain scanners. There are several components that we are able to isolate. It looks like there are a variety of cues that people use to make this very central

judgment that your grandmother sings is just obvious, I know I have done it. It is direct knowledge." Well, it is not direct knowledge. It is inferential knowledge, but inferential knowledge that we mostly get right and it is a good thing that we do. We are starting to know that right temporal-parietal junction in the brain has something to do with detecting when things are not going the way they should, when you feel that things are not in your control. We know the frontal-polar area, behind your forehead more or less, has to do with making the judgment itself. It is having to do with all kinds of self-relevant judgments. It seems to have to do with all kinds of attributions of the kind of person that you are, but you have to know at some level that this is you doing it.

Also, we know striatum, in the old brain, is the reward system of the brain is connected so that you feel reward for your feeling in control – for you being an agent. So we are starting to get an idea of the neural components and psychological cues that people use. So we are starting to understand it, which is kind of fascinating. That is the stuff since 2010.

7. If any, what responsibility do academics and researchers have for contributing to society and culture?

Oh, enormous responsibility! In terms of keeping everything really honest, the pure sciences, the quest for truth is what it is all about. It is not the quest for money. It is not the quest for fame. It is not the quest for personal anything. It is the quest for truth. That is an extremely valuable contribution. I love being at Columbia and many of the Canadian universities, the liberal arts, and the value of culture. It is treasured in the universities. It's so important that

we treasure that. I mean, I go to a lecture and an hour and a half on just on the meaning of a leaf in one painting made by Leonardo. The fact that we have gotten people that were supporting the intense investigation and thinking of details about how things work and the meaning of being a human being. That is what the university is about. Of course, we need money and food. But that core mission is so important for what it means to be a human being. We have *huge* responsibilities! (Laughs)

8. **If you have a take-home message about your research, especially related to recent research on metacognitive abilities in relation to learning, what would you have for people to understand?**

Oh my goodness, I don't know. Metacognition is kind of the highest level of thinking that you have got. And the ability to think about your thinking gives you the possibility to control your thinking and to take responsibility – for you to be free. For you to be responsible for shaping your own mind, it gives you that little prod. In that, you can take control of your own mind and future. It is a little bit, but you have this possibility to change yourself. I think that is a fascinating possibility and people can, because we have got this possibility – and maybe other primates have it or so it looks, but most animals do not have that capability. ***However, you have the possibility to change yourself in a good direction.***

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Dr. Neda Kerimi: Post-Doctoral Fellow, Psychology, Harvard University

September 18, 2013

1. **What positions have you held? What position do you currently hold?**

I actually studied and worked in IT, as programmer and also IT-manager, for a number of years However, I loved psychology too much so I decided to do a PhD in psychology. Since my PhD graduation in 2011, I have been project manager in Uppsala for a project relating to numeracy and now a post-doctoral fellow at Harvard investigating the impact technology has on our decisions and cognition.

2. **In brief, how was your youth? How did you come to this point?**

I was always interested in knowledge and had a curious nature. I was undecided between IT and Psychology so I eventually studied both. Even though my training in Psychology is more extensive, I am still a computer-geek at heart, which works for me since I am interested in how technology is changing our cognition.

3. **When did Psychology interest you?**

I think I have always been interested in psychology. People interest and puzzle me and I love talking and hearing people's stories so it just came naturally I guess.

4. **Where did you acquire your education?**

I actually got my MA in Informatics first and worked a few years in IT. Meanwhile I studied psychology at Stockholm University, Sweden, where I eventually got my PhD.

5. What kinds of research have you conducted up to the present?

I have been involved in many projects with the denominator Judgment and Decision Making. For instance, how Medical Doctor's make decisions, how voting systems impact preferences, how students choose study strategy, how information is processed and distorted in consumer situations, why we procrastinate and so on. With the years, I have more and more become interested in social psychology and HCI.

6. If you currently conduct research, what form does it take?

Being an experimental psychologist, experiments are very important to me. I often look for ideas in the real world but follow it up or investigate it in experimental settings. I think triangulating and replication is important in research so I usually try to mix different methods to study a phenomenon.

7. Since you began studying psychology, what do you consider the controversial topics? How do you examine the controversial topics?

My field, Judgment and Decision making, have a few controversial topics. The one that has always interested me is whether we should rely on our gut feelings or sleep on it before

making decisions. Research has consistently shown that sleeping on it is better, with a few exceptions. However, I have myself not studied this topic, mostly because I am satisfied with the answers that current research has given us regarding that topic.

8. **What form of multi-/inter-disciplinary research does Psychology most need in the near future? What form of research does Psychology need in the far future?**

I can only talk about cognitive and social psychology, as these are the areas I have knowledge in. Both areas are actually doing a very good interdisciplinary job. For instance, many psychologists collaborate with economists and computer scientists to study financial behavior or how technology is affecting us.

9. **If you had infinite funding, full academic freedom, and zero ethical bounds, what would you research?**

I would probably still do what I do, which is studying humans. But I suppose I would have more research assistants so that I could focus more on research instead. Also, not have to spend a lot of time on writing grant proposals would probably make it easier to actually do research.

10. **What advice do you have for undergraduate and graduate students? For Psychology students, what do you recommend?**

Well, I can only give advice about academia. 1) If you are planning to have a career in academia, make sure that you choose a topic that you love. Academia is a tough world (but fun) where positive feedback comes seldom so what drives you have to be your passion for the topic. I cannot emphasize enough how important it is that you choose topic, or any career for that matter, based on passion and not prestige, money, and power (the last three mentioned comes naturally if you do what you are passionate about). 2) Another advice would be to network, but with those whose work you love and want to learn from. Learning from others has been the most valuable knowledge I have gathered. And start early, solid networks take time to build. 3. Focus on your strengths rather than your weaknesses. We all have weaknesses and focusing on only them will hinder you. Besides, everyone has strengths that others don't so use that to your advantage.

11. Who most influenced you? Can you recommend any books/articles?

This is so hard because so many people have. But those who have influenced me has been people whom, despite their accomplishments and fame, are so humble and genuine. I once emailed this extremely famous professor that I wanted to meet him. I really didn't except this person to answer. But I even got a meeting. That inspired me immensely.

12. You co-run a blog called ': InDecision:'. Why did you create the blog? How do you run it? Where do you see it going?

I have always been involved in curriculum activities such as being involved in research societies because I find it so rewarding and important. At the same time, I have always felt that there is a lack of forum for early career researchers, especially in my field, to network. In addition, not everyone has the same opportunities to meet other researchers and exchange ideas. So Elina, the other girl I am running the blog with, decided to create such forum. We knew that there would be interest in such blog (we thought that surely, we are not the only ones in need of such a network). However, we did not expect it to be as well received as it was. Because of the positive feedback we received, we got more inspired and motivated to take the blog further. We actually spend a great deal of our free time on the blog but we get so much satisfaction by knowing that we are making a change in the research field. It should be added that the blog had not been possible without the help of our contributors. We have many exciting projects planned and we are getting more and more visibility for every day so I am excited about the future of the blog.

13. Where do you see Psychology going?

I am probably biased but I think psychology is one of the most important fields and should be taught in every programs (that and statistics). Today, everything that in one way or another involves humans draws conclusions from psychology. I would not be surprised if every company or state will have psychologists in their team.

Dr. Adele Diamond: Tier 1 Canada Research Chair in Developmental Cognitive Neuroscience; Professor, Psychiatry, The University of British Columbia

April 15, 2014

1. **What is your current position?**

I am the Canada Research Chair, Tier 1, and Professor of Developmental Cognitive Neuroscience in the Department of Psychiatry at The University of British Columbia (UBC).

2. **What major positions have you held in your academic career?**

Now, besides being a professor and Canada Research Chair, I am the head of the division of developmental cognitive neuroscience of psychiatry at UBC. Before coming to UBC, I was at University of Massachusetts Medical School (UMass), where I was professor of psychiatry and director of the center for developmental cognitive neuroscience. And before that, I was a visiting associate professor in the department of brain and cognitive sciences at Massachusetts Institute of Technology (MIT). Before *that*, I was an assistant professor in the department of psychology at the University of Pennsylvania (UPenn). Last, and prior to that, I was an assistant professor in the department of psychology at Washington University (Wash. U) in St. Louis.

3. **Can you name a seminal experience in your youth that most influenced your career direction?**

I was not planning on having a career. My high school yearbook says, "Valedictorian; ambition: Housewife." I was going to get married and have children. That changed

sometime while in college. Although, I do not have a particular experience that changed it. So, no, there is no seminal experience, sorry!

4. Where did you acquire your education?

I went to the New York City Public Schools (John Bowne High School) and then I went to Swarthmore College, which is a fantastic undergraduate institution in the United States (US). Harvard University for my Ph.D. and Yale University for my post-doctoral work.

5. What was your original dream?

My original dream was to be home with my kids. And then, when I decided to go on, in college and beyond, I was not interested in science. I was interested in understanding people. I was interested in society and culture, but I was not interested in science. So I avoided anything that sounded like science. I had to take two science courses for distribution requirements. So I took engineering, but, other than that, I did not even take experimental psychology, though psychology was one of my majors, because experimental psychology sounded too much like science. When I went to graduate school, I said, "I want to do interdisciplinary studies in what I called "human development," which I defined as including psychology, sociology, and anthropology. I thought of anthropology as doing investigations that deeply inform us about people, society and culture, however, I did not view it as science. I thought of' 'science' as being something more objective and quantitative. Anthropology gets more at the flesh and essence of things – understanding

individuals in social context as opposed to trying to fit lots of people into some general category. It is the difference between nomothetic and idiographic science. Nomothetic being the attempt to apply principles that apply across the board, but it will not apply perfectly in any individual case. Idiographic refers to studying one case, studying it deeply, but realizing that it will not be able to completely be able to generalize to any other case.

I got two national fellowships for graduate school. One from the National Science Foundation (NSF) Another from the Danforth Foundation. I was a freebie. I got nine years of funding – more than any I could ever use. So the graduate schools said, "Fine lady, you can study whatever you want!" I went to Harvard. Although, my home was psychology. I spent the first four years primarily in sociology and anthropology. Harvard had a cross-cultural training grant that funded PhD students for three years: one year to prepare to go into the field, one year to go anywhere you wanted to go (I was going to the South Pacific because it seemed the most idyllic, and one year to write it up. My idea was…I was reading a lot in sociology, psychology, philosophy… that asserted that people need to feel they are masters of their fate. If they did not feel they are, you see learned helplessness, depression, and suicide. Everything I was reading said there was an intrinsic human need to feel we are masters of our own fates. But everything I was reading was western. It seemed to me that was not necessarily intrinsically human. It might be that someone from another culture might not feel the same way. At any social gathering people find my idea intriguing. I felt I was not coming up with a good way to study this, however. If you think about it more deeply, it gets kind of squishy. What do you want to have control over? How do you exercise control? You can exercise control in subtle ways without it seeming to be

control. The more I went into it, the less confident I was that I could come up with a good study design. Now, I had very famous people at Harvard advising me. I did not think they had a solid idea of how to study this either. This did not seem to bother them. They said, "You'll go on and do great work." I said to myself, "You guys are loonie. I am not going to paradise to be miserable for a year, worried about how I'll get a thesis out of this." I turned down Years 2 and 3 of the funding. I gave the money back. I figured I would re-apply for funding if I ever came up with a good way study it, but I was not going to do a lousy job. So I had to come up with another thesis topic.

My first year in graduate school, which, by that time, was three years earlier. My advisor, Jerry Kagan, had been jumping up and down about the cognitive advances seen in babies in the first years of life such as stranger anxiety and finding a hidden-object. Things like that. These changes appeared at roughly the same time in babies all over the world –babies living at home, babies in daycare, in kibbutzim, in Africa, Europe, Asia, North America, and so on. It didn't matter. He said, "It cannot be all learning. It cannot be all experience because their experiences are too different. There must be a maturational component." He was jumping up and down about it. He was so excited that you could not help but feel excited about it. However, at the time, I had another thesis topic. But when I gave up my original thesis topic, I came back to this question. Clearly, the maturational bit had to be in the brain. So I had to begin learning about the brain. That's how I got into neuroscience. There was no one at Harvard in Psychology at the time studying the human brain, which is hard to believe now. I said to them, "There should be someone on my thesis committee that knows something about the brain, especially the parts of the brain I am

talking about — prefrontal cortex and the hippocampus — just to see if what I am saying makes sense." (My thesis was just behavioral studies with babies, but the hypothesis behind it was based on the brain.) Harvard replied, "We don't have anyone who does this, so we don't think it's important." But they allowed that I could add an additional member to my thesis committee from outside Harvard who had this expertise. I was very lucky that Nelson Butters at the Boston VA accepted my invitation to join the thesis committee as the fourth member.

Until I did my Postdoc in the Department of Neuroanatomy at Yale Medical School, I was pretty much self-taught because there was no one around to teach me. I mispronounced all sorts of words wrong – such as pyramidal neurons which I pronounced as pyr·a·mi·dal (ˈpir-ə-ˌmi-dal) but which should be pronounced **py·ra·mi·dal** (pə-ˈra-mə-dəl) – because I was only learning by reading.

It is ironic that I never expected to be a scientist; I never wanted to be a scientist; yet I have worked not only worked in cognitive neuroscience and developmental cognitive neuroscience but in many different disciplines like molecular genetics and visual neuroscience that even after I went into neuroscience I never imagined do any work in. It was never because I wanted to study another discipline or another technique in themselves. It was because I had a question that required that I go there. So I went into neuroscience because I wanted to answer the questioned posed by Jerry Kagan. All of the other times were that I wanted to answer the next question that came from what I was doing.

6. What have been your major areas of research?

All of my research has been tied to prefrontal cortex and the cognitive abilities dependent on prefrontal, whichare loosely called executive functions (EFs). That involves being able to exert self-control to not blurt out something you regret. You think before you act rather than reacting or acting impulsively. Another part is reasoning and problem-solving – being able to hold different pieces of information in mind and relate one fact or idea to another, to be able to play with ideas in your mind. That involves working memory. Another aspect of the inhibitory control component of EFs besides self-control is selective attention, to be able to inhibit extraneous things so that you pay attention to the most important things. The third core EF cognitive flexibility, involves being able to flexibly react to a situation rather than rigidly sticking to one plan, being able to creatively think outside the box, being able come up with something that perhaps nobody has thought of before. All of my work has been about that. It turns out that the abilities, which were beginning to develop in babies in the first year of life all over the world, were elementary EFs: working memory and inhibitory control. After I got data from monkeys that made an argument that the frontal lobe was involved in these changes, the next question was, "What about the frontal lobe was changing?" It is too vague to say the frontal lobe is maturing. It is like saying, "Children develop." What about prefrontal cortex was changing? Probably a lot of things. But we knew in the monkey brain that the level of the neurotransmitter, dopamine, which is very important in prefrontal cortex was increasing in the whole brain, and particularly in prefrontal. I thought increasing levels of dopamine in prefrontal might be part of the

biological change making possible those cognitive changes in the babies. So how are you going to study this?

It so happened that at a conference a colleague mentioned that she was looking into children with the disorder called Phenylketonuria (PKU). These kids cannot metabolize an amino acid called phenylalanine. If you do not treat this disorder, levels of phenylalanine become so high that they are toxic to the brain, and you have gross damage brain and severe mental retardation. The treatment is to try and remove phenylalanine as much as possible from the diet. However, phenylalanine never occurs in isolation. It is a component of protein. So the only way to take out phenylalanine is to take out protein. You do not want to deprive kids entirely of protein. Doctors needed to do a delicate balance between getting a child some protein and not having the child have too much phenylalanine. Phenylalanine competes with tyrosine to enter the brain. So if the compromise the doctor works out involves the level of phenylalanine in the blood being a little more elevated than it should be, the level of tyrosine reaching the brain will a little less than it should be. Now, what the person at the conference told me was kids with PKU on the dietary compromise prescribed by doctors had EF deficits, but doctors were ignoring those reported deficits because nobody could imagine a mechanism by which only certain functions of the brain would be affected. Besides, the kids looked great on IQ tests, and they had normal head circumference. So the doctors did not want to hear about problems. They said, "We solved this. They are no mentally retarded." Well, when I was a postdoc, on the floor below me, there was a lab headed by Bob Roth who happened to be studying the competition between tyrosine and another amino acid. What they showed was that if tyrosine is lowered only a little bit (tyrosine is the

precursor of dopamine, by the way) it does not affect most dopamine systems in the brain. They are robust in the face of having a little less raw material (a little less tyrosine from which to make dopamine). However, Bob Roth's lab showed that prefrontal cortex is different; it is affected by even small reductions in tyrosine. So I said, "This fits what is happening with these kids with PKU." If they are on diet, phenylalanine levels are only slightly increased, which would reduce the amount of tyrosine reaching the brain only slightly. So it should selectively affect prefrontal cortex and selectively affect EFs. We did an animal model to show this. We followed children with PKU longitudinally to show this. We showed the **mechanism** causing the EF deficits in PKU children and we showed the EF deficits more definitively than had been done before. In response, almost overnight, the guidelines for medical treatment of PKU changed because once they had a mechanism, once they understood the cause and what to do about it, it was easy to react.

In the course of doing the longitudinal study, I got some information I did not want to hear – which was that the special property of the dopamine system in prefrontal cortex that made the effects of PKU selective to prefrontal were also true of the retina. Every last one of the special properties. To be consistent, I had to predict that the retina would be affected in kids with PKU too. I contacted the world's expert on the retina at Harvard. He got all excited because "we know this" and he started telling me at the cellular level. But I wanted to know at the behavioral level so I could study it! He said, "Well, we do not know as much about that. However, we do know that if dopamine is dramatically reduced, as in Parkinson's disease, there is a deficit in contrast sensitivity. So I teamed up with a pediatric optometrist, Chaya Herzberg. We studied contrast sensitivity in the kids. Sure enough, they were

impaired. We had two totally different behavioral deficits predicted by the same underlying mechanism. I can keep going on, but I will not. There is a paper in a book called *Malleable Minds*, edited by Rena Subotnik and others, which talks about how I went from one thing not finding, or that I did not understand, to investigating what might be going on there. How can I try to understand the thing that is not fitting? Or, what are the implications of what we know now for something else? Or, now that we know enough to help kids, how can we go about helping kids, and showing that it helps?

7. If you had unlimited funding and unrestricted freedom, what research would you conduct?

That's easy. I want to study the benefits of theatre, music, dance, storytelling, youth circus, and so on, for kids. EFs are like the 'canary in the coal mine.' They are the first to show the effects, and they show them most dramatically, if you are sad, stressed, lonely, not physically fit, or sleep-deprived. In other words, if you want kids to be able to function well cognitively, if you want them to succeed to school and careers, you need to care about their emotional, social, and physical health. If any of those needs are unmet, they will pull EFs down. It will pull school or job performance down. If you think about the activities that address all the parts of you, it is activities like those I just mentioned. They challenge EFs, which is critical. They require holding information in mind, paying close attention and concentrating, and so on. They give kids great joy and feelings of pride and self-confidence. The things that I have been talking about are ensemble activities like orchestra, social, communal dance, and so on, where everyone is part of a group or team and working

together. Everybody is an important part of a whole (social connection and belonging). All of them involve developing physically. It is most obvious with something like dance or circus. However, even something like playing an instrument requires eye-hand coordination, manual dexterity, and so on.

That is what I would do. I had an ad in *Variety* that asked for funding to do this because the eyes of grant reviewers (who love my basic science work) galze over when I ask for funding to study the benefits of music, dance, storytelling, or youth circus. I am considering trying to raise funds to serious, state of the art studies of this through crowdscource funding.
The arts have been around since the beginning of civilization. And they have been in every civilization everywhere. If they were just a frill, would they have lasted so long and been found everywhere? If they were just a frill, you would not think they would have that staying power. You would not think they would have independently developed in so many different places. They *must* address fundamental needs of people.

8. You earned the Tier I Canada Research Chair Developmental Cognitive Neuroscience in 2004. What is involved in this position? What social responsibilities does subsequent funding and influence entail?

The Canada Research Chair means that I am freed from other responsibilities to do research. I do not have to teach. I teach every other year because I love to teach; I do not get paid anymore to teach. I do not have to run my conference, and I do not get any more pay for running the conference. The conference is for the general public. It is transformational

for the people who go to it and it has a ripple effect, helping many more people than just those who attend. Every single person of the 700+ attending gave it a standing ovation at the end. For the last two conferences (2010 and 2013) 98% of attendees gave it an outstanding review. The effects reach medical practice, educational practice, and parenting. If you go to my website, you will see several different social service things that we are involved in. For the conference, I worked hard with people from countries that Canada is not so inclined to give visas to such as the Philippines, South Africa, or Palestine.

The only child and adolescence psychiatrist in Gaza emailed me that he was coming to the conference. He was all excited. Two weeks later, he emailed me, very disappointed, that his institution had spent all of its travel funds for the year. I emailed him back right away, "Do not worry, you can still come. We will not charge you registration for the conference and between the Arab-Muslim and Jewish communities in Vancouver, each will raise half of the funds for your travel expenses." Of course, I had not asked anybody yet. So now, I had to ask people! (Laughs) People were great. They raised the money. Jews outside of British Columbia (BC), even as far as Israel, sent money.

About 6 weeks before the conference, I received another concerned email from the doctor in Gaza. Obviously, there is no Canadian embassy in Gaza or anywhere in Palestine. So his visa had been sent to the closest Canadian embassy – the one in Cairo – but there was unrest in Egypt and Canada had closed its embassy in Cairo. Also, he was supposed to fly out of Cairo but the border between Gaza and Egypt had been closed because of the unrest. The wonderful, wonderful man who was the Representative of Canada in Ramallah (Hussein

Hirji) arranged for the doctor's visa to be sent to Tel Aviv, but Israel, bless its heart, would not allow a Palestinian to go from Gaza to Tel Aviv to pick up the visa and back. So Hussein had it couriered from Tel Aviv to Sami Owaida (the doctor in Gaza). Then I had to quickly change Sami's flight to go out of Amman, Jordan, instead of Cairo. But he needed a visa to enter Jordan. All of that happened and he was at the conference! (Laughs)

It was great. One of the big topics at the conference was trauma. In particular, the ways to recognize unusual signs and how to try and help people recover. It is hard to think of a place where there have been more traumatized people.

9. What do you consider the controversial topics in your field? How do you examine the controversial topics?

One controversial topic is, what EFs are – if they are distinct or all one? Whether EFs can be improved in children, and how, is controversial. In addition, there is a lot we do not know such as the optimal timing of programs to improve EFs, how long programs should be – in terms of months/years and in terms of how long a single session should be. Many of the programs that have worked have had multiple components. There is disagreement about whether we should try to discover which discrete part is most responsible for the benefit, or whether it is a gestalt and trying to study individual features in isolation would be the wrong way to go.

There are disagreements about how to interpret behavioral findings on EF tests. Exactly, why did somebody fail or succeed? There are disagreements about most everything. So in that sense, most everything is controversial.

10. What do some in opposition to you argue? How do you respond?

Sometimes, it is an empirical question. We respond by saying, "Let's do a study together." I did that with a colleague from England. We published in 2013. He was right. I was wrong. We say this in the paper.

Sometimes, it is very clear that they are wrong, and they are just being stubborn to say what they say, because the data so clearly show they are wrong. I try to say that, but it usually falls on deaf ears.

Sometimes, we, alone, will try to do a study to answer the question empirically. It may at times send me back to the drawing board to re-think things.

11. What advice do you have for young psychologists?

I think that they should follow their heart, what excites them, and not worry about whether they will get a job or even tenure. Sometimes, they think that they should study x because x is more marketable. I do not think that they should worry about marketability. I think they should follow what really is their passion. And the opportunities will come from that

because they will do the best work in what they are most interested in doing. There is no best time to have kids. If somebody is waiting to have kids until there are no pressures or the right time;there is no right time and there always be pressures. You might as well do it.

There is no point in holding a grudge or being ungracious. There is no point in making enemies. Let things roll off your back, and to just be kind and considerate to everybody, even if someone has not been that way to you.

12. Whom do you consider your biggest influences? Could you recommend any seminal or important books/articles by them?

Jerry Bruner, Pat Goldman-Rakic, George Goethals, Robert Swearer, Elliott Stellar, Jim Stellar.

13. In an interview with Dr. Elizabeth Loftus from *In-Sight Issue 2.A,* I quote an acceptance speech for an award from the AAAS for Scientific Freedom and Responsibility. In it, she said, "We live in perilous times for science…and in order for scientists to preserve their freedoms they have a responsibility…to bring our science to the public arena and to speak out as forcefully as we can against even the most cherished beliefs that reflect unsubstantiated myths." How important do you see criticizing 'unsubstantiated myths' in 'perilous times' for Science?

I wonder if that was done during President Bush, seriously, because he would say things that were not true. There were political ads by "Swift Boat Veterans for Truth"that were full of

lies first against Senator Max Cleland from Virginia, a Vietnam veteran who was paraplegic, and they challenged his patriotism and military duty. After that, they did to the same thing against Senator Kerry when he was running for President. What they said were lies, just lies.

A lot of times, if you look at the discussion section of a scientific paper, what is said there is not substantiated in the results section. Oftentimes, what people will say in the press, or a discussion paper, is unsubstantiated, even though they make it sound like it is substantiated. That is very serious, a very serious problem.

I think it is very important to speak out against lies, to speak the truth, and the to stand up for justice and what is right. It is important to speak up when scientific findings are ignored or mis-used.

Prime Minister Harper is making it difficult for scientists in the federal government here to get the truth out. If he disagrees with the truth, they are not supposed to publish it. That is a huge problem.

14. I noticed in conducting a rather large literature review with a professor from the University of the Fraser Valley, in some of our research for environmental psychology, the discussion on the great level of lobbying involved in environmental issues.

Look at fracking, the evidence is that it is bad. We should not allow fracking. However, there is so much money coming from the industry that the material is not coming

through. President Obama supports fracking now, and he is a good man. I think if he saw the evidence, he would change his mind. It is a huge problem. People claim x, y, and z is evidenced-based. That a, b, and c are not. Even though, the evidence shows the reverse.

Emile Durkheim said, 'Words really are not nearly as powerful as we thought. They do not really have the power to persuade you if your mind is set against it. The only time words have power is if you were already sort of inclined to think that way.' If you were not inclined in that way at all, words will not likely persuade you.

15. **Regarding Durkheim's statement, this might support more foundational education. For example, rather than a smart group of people selecting the appropriate thoughts and ideas for everyone in their education, you have students learn the tools for effective reasoning.**

Right! You want people who can reason, problem-solve, can think, and can use executive functions.

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Dr. Maryanne Garry: Psychology Professor, Victoria University of Wellington

December 15, 2013

1. **What academic positions have you held? What academic positions do you currently hold?**

   I was a postdoc at the University of Washington, working with Elizabeth Loftus and Alan Marlatt, and then I came to Victoria University of Wellington in 1996. I've been there ever since. I'm a Professor of Psychology here.

2. **In brief, how was your youth? How did you come to this point?**

   I'm really a first generation college kid. My parents grew up in the Great Depression and thought college was the way you get a high paying job that gives you lots of security. They were never thrilled with my interests in academia.

3. **When did Psychology interest you?**

   Well, from the time I was about 8, I wanted to be a forensic scientist. It wasn't until I was about to graduate from a forensic science program as an undergrad did I learn that I would not be able to pass the eye text to be an FBI agent. Back then, the FBI was suspicious of contact lenses. So I used my forensic and chemistry degrees to teach high school, and then I became interested in cognition, and I realized that I could still tackle forensic problems via cognitive psychology.

4. **Where did you acquire your education?**

I did my PhD at the University of Connecticut and my Forensic Science and Chemistry degrees at the University of New Haven.

5. What kinds of research have you conducted up to the present?

I've done research on eyewitness memory, implanted false memories, expectancy effects, truth effects, and some educational research.

6. If you currently conduct research, what form does it take?

I'm doing a lot of work with my grad students.

7. If you had infinite funding and full academic freedom, what would you research?

Probably the same thing I do now. I really like human memory.

8. Since you began studying Psychology, what do you consider the controversial topics? How do you examine the controversial topics?

Without a doubt, in my field it's been the drama about repressed and recovered memories. But across psychology, I think the controversial topic is what's happening now with respect to null hypothesis testing; replications; low ns producing quirky results, etc.

9. How would you describe your early philosophical framework? Did it change? If so, how did it change?

The classes I had with Mike Turvey as a grad student had an enormous impact on the way I think, or at least try to think. I know a lot of people think the Gibsons and their wider ecological approach is some kind of wacky cultish thing, but I don't. In this big picture sense, I think my frameworks haven't changed that much. On other levels, yeah, they've changed. It's a mix of hilarious and painful for me to pick up my dissertation and read any random page. For one thing, I didn't know anything. That's the great myth of getting a PhD: that you'll leave with your degree knowing what you'll need to know for the future. For another thing, I am much more dedicated to well written manuscripts. The day is too short to slog through papers that make your eyeballs bleed.

10. What advice do you have for young Psychology students?

Without a doubt, here are the three pieces of advice that probably account for 90% of the variance in success:

Learn to write. Nothing else matters if you write like crap. Think of the last few truly engaging scientific articles you read. Were they in a journal? Probably not. They were probably in Scientific American, or New Scientist. Learn to write like that. If you have been

told that "good data speak for themselves," guess what? They don't. Likewise, the idea that you need to write in polysyllabic passive prose. Ugh.

Write an hour or two every day. Without fail. Mark it in your calendar, and treat it the way you would any other important appointment. You wouldn't not show up to teach class. Show up to write. The most productive writers write every day, whether they think they have anything to say or not. It turns out they always have something to say. Don't think you're a writer? That's the first hurdle you need to get over: you are. So yep, turn off Facebook, staple your ass to a chair, and write.

Master the technical side of research. That means taking stats classes, and learning to program. Don't leave grad school until you know something about multivariate techniques, and can program an experiment.

11. Who most influenced you? Can you recommend any seminal books/articles?

I had a few influential professors in grad school. From my advisor, Scott Brown, I learned how to be a good advisor. From Mike Turvey, I learned the importance of good teaching and the well-crafted lecture. From Beth Loftus, I learned that how you say something is as important as what you say.

12. Where do you see Psychology going?

Away, finally, from slavish reliance on null hypothesis testing and goofily erratic effects. At least I hope so.

Dr. Rakefet Ackerman: Assistant Professor, Psychology, Technion: Israel Institute of Technology

October 15, 2013

1. **What academic positions have you held? What academic positions do you currently hold? What is your expertise?**

During my Ph.D. studies, I taught Cognitive Psychology in the Open University of Israel and Human Memory in the University of Haifa. During my post-doc, I did not teach. At present, I am a faculty member at the Technion—Israel Institute of Technology. This university is focused on science and engineering, and does not have typical social-science departments. My position is in the Faculty of Industrial Engineering & Management, which is a highly heterogeneous faculty including engineers, mathematicians, computer science researchers, finance researchers, etc. and psychologists. The group of psychologists includes three domains: marketing, organizational psychologists, and cognitive psychologists. I am in this latter category. At the undergraduate level I teach human-factors engineering, which combines my backgrounds as a system analyst in the software industry and cognitive psychology. For graduate students I give metacognition class, which is my domain of expertise.

Metacognition is a set of cognitive processes that accompany each cognitive task we perform. For example, when a student studies, beyond the transfer of information from the information source (e.g., a book, computer, or auditory source) into memory, the learning process involves regulation of the memorizing and comprehension processes. The student asks herself how well she knows each particular paragraph and decides whether to move on or to restudy it. In other words, during studying, she assesses her progress, and decides whether her progress is adequate or another learning

strategy would better be applied. Alternatively, seeking help is desirable. Finally, she may consider taking a break or decide that the acquired knowledge is satisfactory for achieving her goals. Similar processes take place with facing a test. Prior to answering each question, the student considers the question's difficulty. Whether a point exists in searching her memory for relevant knowledge or she knows too little about the solicited information. After providing an answer, she considers if the answer is good enough or more work is needed. Such knowledge assessments and regulatory decisions are metacognitive processes that take place in large variety of contexts, beyond learning. For example, when a doctor considers a diagnosis, she should consider whether she knows enough about the phenomenon or should seek more information, whether she needs additional blood tests for assuring her hypothesized diagnosis, and whether she is confident enough about appropriate medication. Similar processes take place in every profession. Take a daily example, when baking a cake, you ask yourself whether you remember all the ingredients and procedures or better consult the cookbook.

The assessment of our knowledge, progress, or success, is called "Monitoring", and the decisions we take in light of this monitoring are called "Control" or regulatory decisions. The metacognitive research domain focuses on exposing factors and conditions that affect our monitoring differently than our actual performance – these discrepancies suggest that the monitoring processes are not always reliable. Furthermore, we better acknowledge situations where monitoring is particularly biased and others in which it is more reliable. This is important because people cannot know their actual knowledge or expected success without external feedback. Thus, they take actions in

light of their subjective monitoring. If the monitoring output is biased, it is expected to mislead the regulatory decisions. For example, if the student is overconfident about her knowledge and assesses her knowledge to be adequate she would cease studying even though her knowledge is too low to achieve her goals. In one of our studies (Ackerman, Leiser, & Shpigelman, 2013), we found that undergraduate students who studied explanations how to solve very challenging problems were misled by non-informative illustrations incorporated in the explanations. They assessed their understanding to be higher for the illustrated explanations than for the plain explanations, although their actual performance was in fact lower. Their subjective assessment of comprehension was above 90% while their actual success rate was below 40%. This means they exaggerated their assessment of comprehension in about 60%. For the plain explanation versions, they exaggerated "only" in 30%. In another line of research, we showed that studying texts from the computer screen results in larger overconfidence and lower test scores than studying the same texts on paper (Ackerman & Goldsmith, 2011; Ackerman & Lauterman, 2012). In the examples above, such overconfidence may have clear undesirable outcomes like inadequate medical diagnosis or a messed-up cake. Underconfidence is not desirable as well, as it may lead people to invest too much effort in a particular item while the time could have better be used to study other materials, or for going out with friends…

2. **What was your original dream? If it changed, how did it change? Furthermore, what changed it? Where did you acquire your education?**

In the high school, I studied in a program, which elaborated on computer science. When I joined the Israeli army, as all Israeli boys and girls, I took part in a software development program, which involved two-year studies and four more years of service in a software development unit. I started as a team member, and later on worked as a system analyst and led a software-development team. As part of this program, we could start our Bachelor Degree in the university. I saw my future in software development, but the degree had to include an additional course. I was interested in psychology, and finally graduated in a combined degree: computer science and psychology. After this, I worked for software companies and led international teams with up to 20 people. I worked with systems that involved large databases and faced challenges that involved management of large amounts of data. After more than 10 years in this industry, I arrived at a new point in my thinking. I thought the software industry should be informed by cognitive science. The human memory system manages large amount of data with great efficiency. Thus, I thought that insights from its great data processing capabilities may inform the software industry. At that point in time, I was already a mother to three young daughters, which made studying a new world, not an easy decision. Nevertheless, I decided that two years of M.A. studies might allow me to bring a fresh point of view to the software world.

As part of my search for studying about the management of the human memory system, I encountered the domain of Metacognition, and the lab in the University of Haifa, Israel, where leading researchers of this domain work. Dr. Morris Goldsmith became the supervisor for my M.A. thesis. As well, Dr. Asher Koriat, head of the lab, was a

collaborator on another research project. During graduate studies, I felt astonished by intriguing research questions studied in this domain and rigorous research methods employed to address these questions. As a result, this two-year program was converted into a direct Ph.D. course. I realized that there was no way back to the industry for me. I got caught in the research world.

The metacognitive research domain evolved as part of memory research. This domain, called meta-memory, involves monitoring and decision control involved in memorization of word lists and answering knowledge questions by retrieving information from memory. I am attracted to more complex cognitive tasks, such as reading comprehension and problem solving. I learned more about these complex tasks from my post-doc supervisor, Dr. David Leiser, at the Ben-Gurion University, Israel. Now, I see metacognition as ubiquitous, but hidden behind the scene, in every task people perform. My mission is to contribute to the scientific understanding of the metacognitive processes involved in performing complex cognitive tasks and lay the grounds for developing methods for improving their quality.

3. What kinds of research have you conducted up to the present? If you currently conduct research, what form does it take?

Mainly, my studies are performed in my lab, but some occur in classrooms or over the Internet. The lab includes eight computer stations in a small room. The tasks involve learning, question answering, or problem solving. In all tasks, immediately after

performing each task, e.g. solving a problem, the participant indicates how confident she is, on a scale of 0% to 100%, that her solution is correct, and then she moves on to the next item. I measure accuracy of the response, confidence, and response time. All my studies are experimental, which means that we manipulate a variable or two. In the example above, we manipulated the presence of the illustrations in the texts. This was manipulated within participants. This means that each participant studied half the texts with illustrations and half without them. Each text had a version with illustrations and a plain version. The assignment of texts with and without illustrations was random for each participant for ruling out effects of particular texts and/or illustrations on the results. In the media experiments, we manipulated the media for studying between participants – half the participants performed the entire task – learning, predicting their success at the test, and test taking – on the same media, either screen or paper. This was done to avoid attracting participants' attention to the media, which may contaminate the results. In other studies, we compare working with and without time pressure, or manipulate motivation for success by assigning higher point value to some items than for others.

4. If you had infinite funding and full academic freedom, what would you research?

As stated earlier, I see my mission in spreading the word regarding the proneness of the subjective assessments of knowledge to numerous misleading factors in all aspects of life. The problem in this domain is that the research progresses slowly – we must be very careful and make sure that our studies are rigorous in order to draw reliable

conclusions. The study domain is still young, and we know little about the processes involved in performing complex tasks. For example, what are the metacognitive processes involved in engineering work of designing a new machine? Therefore, I need many collaborators and graduate students to share my ambitious to understand better the biasing factors and think together about ways to overcome these biases. Up-to-date technologies, like virtual reality, eye tracking, fMRI, can contribute to this avenue. My dream is to see educational systems and professional development programs incorporate in every activity acknowledgement in the potential metacognitive biases and the necessity to minimize these biases for effective performance of tasks.

5. What controversial topics exist in your domain?

Examples of controversial issues in metacognition are:

Is the metacognitive monitoring and regulation of cognitive efforts conscious or unconscious?

Does the metacognitive monitoring only drive behavior, in a top-down fashion, or also informed by the behavior after it was done, in a bottom-up fashion?

Is there a central monitoring mechanism with common characteristics for all cognitive tasks, or are there differences between the metacognitive processes that take place in the various tasks?

6. How would you describe your philosophical framework?

A combination of focus and openness is my secret. I realize, of course, that this sounds like an oxymoron. As mentioned above, I see metacognition everywhere and keep analyzing the world from this point of view. This is the focus side. The openness side is that I see myself as a collector and integrator of ideas more than as an inventor. I keep listening to people, seniors, and juniors. In particular, I learn a lot from discussions with students. I enjoy greatly their fresh minds and the original links they make between topics they study or from their personal life experience. This attitude brought me to major leaps in my research programs. One of my studies evolved from a private conversation with a junior (at the time) colleague who asked an intriguing "what if" question regarding the study I presented to him. Another study evolved while I was standing in a traffic jam, and watched how people get into the junction and sometimes take risks just because they are tired of waiting for the junction to clear. A collaborative study with Dr. Daniel Bernstein, from Kwantlen Polytechnic University, evolved from a short discussion during a coffee break in a conference. Yet another example is a study in which our plan failed, but my graduate student suggested a new way of looking into the results we already collected. This was then developed into a new study which provided us with highly interesting insights. From a more general perspective, failures often provide opportunities to learn something new. One of my papers in a leading journal (Thompson et al., 2013) was evolved from a failure in replicating a well-known finding. The graduate student who her very first study was failed was so disappointed that she almost left the program. However, we then considered an explanation for the

failure, with the help of Dr. Valerie Thompson from Saskatoon and together came up with beautiful findings and a theoretical contribution.

7. What advice do you have for young Psychology students?

I think that the previous answer, regarding the combination of focus and openness tells the main story. Most students do not know their focus yet. Therefore, openness is the main thing, while it is clearly relevant for those who know their focus as well. I suggest benefiting from the university period much beyond the studies per se. Go to talks of guest speakers, go to other faculties if something there attracts your interest, interact with researchers from various disciplines, consider interesting questions, and search for answers. For those who consider research as their future direction, get involved in research as early and as much as possible. At the beginning, take part in experiments as a participant, and later on as a research assistant. Take courses that involve developing research proposals and conduction of pilot studies. This is the only way to understand this world and examine whether it attracts you.

8. Who most influenced you? Can you recommend any seminal books/articles?

The papers that influenced me the most were writings by Tom Nelson, Louis Narens, Janet Metcalfe, Robert Bjork, John Dunlosky, Keith Thiede, Valerie Thompson, and Asher Koriat. I recommend a recent review paper and a friendly book that summarize the domain nicely and point to its applied relevance.

Bjork, R. A., Dunlosky, J., & Kornell, N. (2013). Self-Regulated Learning: Beliefs, techniques, and illusions. *Annual Review of Psychology, 64*, 417-444.

Dunlosky, J., & Metcalfe, J. (2009). *Metacognition*. Los Angeles: Sage Publications, Inc.

9. Where do you see Cognitive Psychology going?

I hope to see the cognitive psychology go beyond artificial tasks that can be generated only in the lab, into real-life tasks with larger variety than studied up until now. This requires sophistication and development of research methods that support it without compromising on rigorous research methods.

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Dr. Gira Bhatt: Principal Investigator and Project Director, AT-CURA

October 1, 2013

1. **What academic positions have you held? What academic positions do you currently hold?**

My professional academic career began at the University of Mumbai, India. Briefly, I worked as a clinical psychologist at a children's hospital. Later, I was a lecturer at an undergraduate institution affiliated with the University of Mumbai. After completing my Ph.D. at Simon Fraser University, BC, Canada, I taught at Camosun College and University of Victoria, BC, Canada.

At present, I am a faculty member in the Psychology department of Kwantlen Polytechnic University, BC, Canada. As well, I am the Principal Investigator and Project Director for Canadian government funded Community-University Research Alliance (CURA) project. CURA is a multidisciplinary, multi-institutional, multi-partnership project involving four academic institutions, seven researchers, and eleven community agencies. Additionally, I am actively involved as the board member and the secretary of the International Relations Committee of the Canadian Psychological Association.

2. **In brief, how was your youth? How did you come to this point?**

I was born and raised in Mumbai, India. My family tradition was guided by strong commitment to scholarship and spiritual pursuits. My father was a journalist, poet, writer, and later a Yoga teacher in retirement. My mother was gentle, but strong, and kept the family life stable and happy. I had strong extended family ties. I recall being surrounded by

numerous cousins and visiting relatives, which provided for many happy times. I loved school. From a young age, I wanted to be an academic.

When I turned 16, I began questioning some of the traditions of life in India. I became an "atheist" much to the despair of my relatives, and surprise of my friends. However, my father provided me with a long list of books on philosophy and religions for study. The turning point was the study and practice of Yoga for over 8 years. Although practice of Yoga had been part of my family tradition, I needed to examine the philosophy of it, which appealed to my rational mind. The secular roots of Yoga provided a strong ground I was seeking to keep my mind balanced and a perspective that went beyond the immediate.

Yoga and Psychology are intertwined. Therefore, it was natural to veer in the direction of Psychology.

3. When did Psychology interest you?

Actually, my entry into Psychology was accidental. As an undergraduate student in Mumbai, India, I wanted to major in English Literature because I loved the works of classic writers and poets including Shakespeare, Jane Austin, Bronte sisters, and others. However, my English department informed me that it did not have enough students to offer the major. On this basis, they advised me to sit in any class for the first two weeks, and wait for more students to come forward to declare English Literature as their major. Of course, I was disappointed and a bit worried.

Anyway, I decided to go to a class. My friends told me about a hugely popular class taught by a popular professor. I always remember that class. There were 150 students in the classroom, no microphone, and the old professor was sitting in his chair talking very gently to a very captive audience. It was an Introductory Psychology class! There was no turning away from there! Two weeks later the English department approached me, much too late…

4. Where did you acquire your education?

I completed my Bachelor's degree with honors in psychology and Master's in Clinical psychology at the University of Mumbai. I then came to Canada and earned my second Master's degree and Ph.D. in Social psychology. Yes, I switched from clinical to experimental field of psychology as I wanted to pursue basic research rather than practice in the field of psychological illnesses.

5. What kinds of research have you conducted up to the present?

I have three concurrent research tracks. One is focused on Cross-Cultural Psychology examining the issue of self, identity, and acculturation. Second pertains to Applied Social Psychology working with a network of academic scholars and community agencies targeting prevention of youth violence and gang involvement. Third is an overarching philosophical and historical examination of psychological knowledge.

6. **If you currently conduct research, what form does it take?**

Having worked within community-involved research for the last five years, I have decided to work only on collaborative research projects with community input, academic rigor, and a set of clear application-to-life goals.

7. **You have conducted practical and applied research through AT-CURA along with researchers from your university as well as Simon Fraser University, University of Victoria, and Langara College. What is AT-CURA? What is the purpose of AT-CURA? Why do you consider unifying 'community partners and academic experts' through a common vision important?**

Acting-Together: Community-University Research Alliance (AT-CURA) is a five-year long project (2009-2014) funded through Canadian Government's Social Sciences and Humanities Research Council (SSHRC). The goal of this $1 million project is to identify protective factors that may prevent youth from violence and criminal gang involvement. Importantly, unlike most traditional academic projects, academic research is but 1/3rd of the project. The other two major arms of the project are; ongoing training/education of all involved in the project including youth, and continual knowledge dissemination using both academic and popular media.

SSHRC's mandate for CURA projects is that academic researchers must work alongside community partners at every step of the project from day one until the conclusion of the project. I wholeheartedly embrace this ideal.

As an academic researcher, I had remained rather painfully aware of the two solitudes created by the academic and the community. Academics, especially social scientists, have carved out an ivory tower, which they parachute out of from time to time into an outside community to "collect data". Next step is to remove any trace of the individual identity of the data contributor. This "coded data" is taken back to the ivory tower where these data pieces are examined, analyzed, chopped up, decorated with charts and tables to be served on the platter of research journals, conference presentations and books – that only a handful may actually read, understand, or find relevant. Although, there is great value in "knowledge for the sake of knowledge", creation of academic knowledge accessible only to the academic elite is unfair and meaningless. On the other side of things, the community relies on 'common-sense wisdom' and works on the "application" side of knowledge without the support of the evidence-based research.

The divide between the academic and the community must be bridged, such that the context is created for the cross-fertilization of knowledge. Academic rigor and community wisdom, when amalgamated, allows for meaningful contributions by the individual and collective to create a better world.

8. If you had infinite funding and full academic freedom, what would you research?

My research goal will be to move closer to the ideal possible world where groups of people from diverse cultures, nations, religions, traditions, and political ideologies live harmoniously. Yes, understating the dynamics of intergroup relations are important, especially as we are a 'Global Village' with increasing movements of millions of people across continents. This expands with the world coming together and becoming connected through rapidly advancing e-technology. This is our future. Our next-door neighbors will be "different". Yet, they will be part of our shared world. If my research can make a small, humble contribution in helping build harmonious human connections, I would consider my life blessed.

9. Since you began studying Psychology, what do you consider the controversial topics? How do you examine the controversial topics?

As a social psychologist living in Canada, controversial topics to me are inter-cultural relations. Traversing the fine line between the freedom to practice one's cultural traditions while integrating into mainstream life in Canada. It can be a challenge. Some issues such as newcomers to Canada wearing head covers (Hijab, Turbans), face covers (Niqab), body covers (Burqa), and following tradition-specific gender norms are controversial. As well, "racial profiling" is problematic.

There is no one correct way to examine these topics. However, it is my understanding that top- down imposition of "laws" make for a greater divide and discontent within the society;

whereas allowing everyone an opportunity to shape laws and policies create good will and receptivity to them. Therefore, my inclination would be to involve members of the groups who might be the targets of the controversy, the policy makers, and expert researchers to work collaboratively to come up with a win-win situation.

10. How would you describe your early philosophical framework? Did it change? If so, how did it change?

As noted earlier, growing up in India, cultural and spiritual traditions dictated my world view. My cultural value's foundation has remained strong within me. As such I believed, and continue to believe in the inherent goodness of people, and that being able to help one and all without expecting rewards and recognition is a duty ("*Dharma*"), and that maintaining a larger perspective on life protects one from stresses of the here & now, and keeps one humble.

These basic values have not changed. Rather personal experiences strengthened my belief in the importance of human connections and making decisions based on the larger perspective on life.

11. What advice do you have for young Psychology students?

Make career decisions wisely. Once a goal is established, give your best to every task, no matter how small, how trivial. Never be a minimalist but go beyond what is required. Learn to be a team player.

12. Who most influenced you? Can you recommend any seminal books/articles?

From my Eastern roots, I would consider Patanjali, an ancient scholar from India's sacred tradition as the one who influenced me deeply. His seminal work "*Yoga Sutras*", a compilation of Sanskrit hymns, provides a rational and secular philosophy of human nature.

From the standpoint of my Western academic life, I would pick William James as my ideal. James- the great thinker, James- the wise scholar, James – the amazing writer is an enduring source of inspiration to me. His book "Principles of Psychology", especially the chapter on the self and consciousness is probably the best psychological discourse I have ever come across.

13. What do you hope to achieve in the near and far future with AT-CURA?

AT-CURA research findings are gradually being disseminated and it is rewarding to see these being embraced by law enforcement agencies, policy makers, and service providers. My vision for AT-CURA is to continue the good work that the project has initiated and inspired. Our academic-community collaboration is very strong today, and work needs to continue to keep it well-nurtured so it can keep growing stronger and larger. I

envision that it will have a sustained existence at KPU so researchers and community partners maintain their ties and collaborate on evidence-based programs that will help our youth make right choices in life and keep our community healthy and thriving.

14. Where do you see Psychology going?

Psychology as a discipline has very unique historical foundations, and its rapid growth since the early 20th century has been non-linear and multidirectional. In light of this, concerns exist about the field "splitting" into too many branches. Psychology as a unitary discipline might be lost in future altogether. I am not sure if there is any trend to allow speculation about the disciplinary direction. I see one constant though. Given that human behavior remains dependent on its contexts – physical, social, cultural, political – which constantly keep changing, the discipline of psychology will never go out of business- although it may take on different garbs and labels.

Dr. Diana Sanchez: Associate Professor of Psychology, Rutgers University

August 28, 2013

1. **What positions have you held in Academe?**

After receiving my PhD in 2005 from the University of Michigan, I accepted a tenure-track position in the Psychology Department at Rutgers University in New Brunswick, NJ. I have been there ever since. I am currently an Associate Professor of Social Psychology.

2. **In brief, how was your youth? How did you come to this point?**

My youth was a bit challenging. My mother died of cancer when I was 17 and my father died of a stroke when I was 21. In some ways, academia saved me because it became my home when there was no home to return to.

3. **When did Psychology interest you?**

As an adolescent, I remember wanting to become a supermodel or a psychologist. I quickly became disenchanted with the idea of modeling and the unrealistic body ideals for women in the industry. No doubt my stint in modeling inspired some of my work on the danger of unrealistic body image ideals.

My true passion for psychology began as a teenager. I found myself playing the role of psychologist for my friends and family, which drew me into my present career path.

4. **Where did you acquire your education?**

After growing up in a small town in Cresskill, NJ, I attended Bard College on the Excellence and Equal Cost Scholarship (essentially a scholarship that allows you to pay state college prices for a private school education if you graduate in the top 10% of your high school class). At the time, Bard College was a very liberal environment full of tree-hugging liberals and high school outcasts. It suited me well. At Bard, I began conducting social psychological research with Dr. Tracie Stewart, which led me to graduate school in a joint social psychology and PhD program at the University of Michigan in Ann Arbor.

5. What kinds of research have you conducted up to the present?

I have two lines of research. The first involves examining how sexism and the social construction of gender influence interpersonal relationship. For example, I have tackled questions such as, "How do gender role prescriptions influence sexual satisfaction?" "What are the interpersonal costs and benefits of confronting sexism" and "When do gender roles restrict men and women's freedom to be themselves in relationships?" The second line of research involves identifying the impact of biracial identities on race, intergroup relationships, and social categorization processes. This work focuses on how racial ambiguity challenges prejudice and rigid social cognition. The core question here is "What impact does the growing biracial population have on how we think about race and the relationships between racial groups?"

6. If you currently conduct research, what form does it take?

Currently, I examine the social conditions under which racial ambiguity influences racial attitudes after interpersonal interactions. I have also begun some promising work at the intersections of gender and race to better understand the experience of women of color and the health consequences of combined gender and race-based discrimination.

7. Since you began studying psychology, what do you consider the controversial topics? How do you examine the controversial topics?

Any research that challenges the wisdom of conforming to gender norms could be considered controversial in the eyes of the public because many are resistant to scientific studies that demonstrate costs of what some consider the way men and women should behave. Because my work explores the potential costs of restrictive gender roles, I sometimes receive some resistance.

In the field of psychology, I also find it controversial to study sexuality because many do not consider sexuality research a science worthy of study despite the obvious importance of sex to virtually all aspects of psychology. As a result, not many social psychologists study sexuality but I see too much importance in sexuality research to ignore this importance facet of interpersonal connections.

At first, studying biracial identity was controversial topic because many did not consider biracial identity to be a legitimate identity. The resistance to biracial identities came from

both conservative and liberal circles. In some parts of the country, there was (and continues to be) a strong backlash against interracial marriages and much early research seemed influenced by conservative racial politics. For example, in the 1950s, biracial individuals were described as psychologically disturbed and criminally-minded. Even after some of these ideas were discarded, others resisted biracial identities because they felt that biracial individuals could diminish the power of minority political movements by reducing the population counts of minority populations. Others accused biracial people of trying to escape their minority identity and pass as White. So, there was a public sensitivity around biracial identity, which was only recently overcome by the large, outspoken biracial community who demanded that biracial identity be recognized as a real identity. So, studying biracial identity no longer seems controversial though there is still some backlash from racially prejudiced groups who do not approve of racial mixing.

8. How would you describe your early philosophical framework? Did it change? If so, how did it change?

Do what you love and you will live a fulfilling life. This is the philosophy that led me to my career. As for a philosophical framework for my research, I suppose one could say that I adopt a self-determination approach. That is, I think that we have two core motivations that explain a great deal about behavior—the desire to belong and connect with others and the desire to feel autonomous, free, and authentic. I still believe these are cross-culturally important motivations that can help explain social behavior.

9. If you had infinite resources and full academic freedom, what would you research?

If I had infinite resources and full academic freedom, I would utilize more international samples, purchase biomedical equipment to study the interface of the physiological body and the mind, and conduct more longitudinal studies to ascertain long-term psychological consequences. If I had infinite resources that I could use for non-research purposes, I would create programs to improve the diversity of psychology programs at the graduate and faculty levels.

10. What advice do you have for undergraduate and graduate students? For Psychology students, what do you recommend?

If you are passionate about your topic of study, work will not feel like "work". So, pick ideas that will sustain your passion. For those who strive to join PhD programs, get involved with publishable research early in your career. Moreover, I highly recommend getting closely involved in different areas of psychology because I strongly believe that the most exciting innovations to come will be those that bridge across areas of psychology.

11. Who most influenced you? Can you recommend any books/articles?

There are several mentors who influenced my thinking and advised me along my career path (Tracie L. Stewart, Jennifer Crocker, Margaret Shih, Laurie Rudman, Abigail Stewart, and James Jackson). Of course, there were also those scholars whom I have never had a chance to

talk to in person but whose work has and continues to inspire me (Alice Eagly, Anne Peplau, Susan Fiske, Claude Steele, Jennifer Richeson, M. Lynne Cooper, Edward Deci, Richard Ryan). And of course, there are the intellectual pioneers of the social psychology of identity, prejudice, and stigma (Henry Tajfel, Gordon Allport, Erving Goffman) whose work laid the foundation for the research that I conduct today. Perhaps, I would recommend that people start with Gordon Allport's Nature of Prejudice and Goffman's book on Stigma: Notes on the Management of Spoiled Identity.

12. Where do you see Psychology going?

I can only answer the question of where I would like to see Psychology go. I hope that Psychology continues to bridge with other disciplines so that scientific discovery can reach its full potential. I hope that we continue to explore the links between the mind and the body. I hope that we become an even more open science so that our work is more widely distributed and we can educate the public. Also, I believe a standard of open science (e.g., data sharing) can also prevent fraudulent science.

Dr. Miriam Erez: Professor Emeritus, Vice Dean MBA Programs, Technion: Israel Institute of Technology

April 8, 2014

1. **In terms of geography, culture, and language, where does your family background reside? How do you find this influencing your development?**

   I was born in Israel. My father came to Israel in a youth movement in 1925, as a pioneer who wanted to build an independent state for the Jewish people, and their dream was realized 1948 with the establishment of Israel as an independent state.

   My mother's older brother did the same, and his family followed him and came to Israel in 1931, when my mother was 11 years old.

2. **What do you consider a pivotal moment in your upbringing? Did this influence your entering into your field? If so, how?**

   A pivotal moment was when my parents moved to a suburb of Haifa, when I was 8 years old. In this community the emphasis was on contribution to the society at large and to the local community in particular, including the absorption of new immigrants who managed to survive the holocaust and to come to Israel. This has strongly influence my own personal development.

3. **Your current responsibilities lie in research and teaching under *The Mendes France Chair of Management & Economics*. What does this role imply? What courses do you teach at present? In particular, what research have you conducted up to present through this position?**

I do not anymore hold the Mendes France Chair… because I am a professor emeritus now. However, I am still the Vice Dean for the MBA programs, the advisor to the Technion President on the promotion of women students and faculty, I am the chair of the National Council for the promotion of women in science and technology, and the founder and chair of the Knowledge Center for Innovation, which I established after I received the Israel Prize in 2005, and I felt I want to contribution to the Israeli society by enhancing innovation in the Israeli industry.

4. **An aging workforce stands as a major problem for the economy of advanced industrial nations, especially in the long-term. According to Tanova and Boltom in 2008, traditional factors contributing to 'voluntary turnover' are the 'ease of movement' and the 'desirability of moving' with regards to work. Furthermore, you found new results about the contributory factor of 'job embeddedness'. In a paper entitled *Why People Stay: using Job Embeddedness to Predict Voluntary Turnover* (2001), you state, "The personal and organizational costs of leaving a job are often very high." Can you define 'job embeddedness'? Why does voluntary turnover occur in spite of the 'very high' costs? In particular, what does this mean for advanced industrial nations with an aging work force?**

Embeddedness conveys the meaning of being part of workplace, part of the community and part of the physical surrounding. One of our poets – Saul Tcernichovsky, wrote that a "Man is nothing but his native landscape format". What this means is that we are shaped by, and become part of the place in which we work, we live as part of the social community, and as part of the physical landscape. Our research findings showed that indeed, people who have a stronger

sense of embeddedness are less likely to change their workplace and their social community. This paper highlights the existence of forces that attenuate the likelihood of turnover, and that it is not only the level of work satisfaction which explains the tendency to stay or quit jobs.

5. **Of particular interest in the area of life, but within your area of expertise as well – work, you published a paper in 2013 called *Emotion Display Norms in Virtual Teams*. You incorporated a conceptual framework from *A dynamic multi-level model of culture: From the microlevel of the individual to the macro level of a global culture* (2004). This describes the connections of nested relationships between cultures and values from the individual to the global level. What were the findings of this 2013 paper? In addition, in an increasingly diverse, multi-cultural, and international world and subsequent work environment, how much does understanding multi-cultural and contextual differences in emotion matter for virtual collaboration?**

We are only now starting to learn the effect of a virtual, multicultural environment on human communication, on the social identity – from a local identity to a global identity, and on team cooperation and team performance. The 2013 paper on emotion display norms showed that there is going to be a global culture, with global emotion display norms. Namely, when working in the global work context, people from different cultures perceive the emotional display norms in a similar way, namely, more positive and less negative than in their own culture. While there is going to be a consensus among members from different cultures about the emotion display norms in the global context, there is still a high variation in the perceived emotion display norms

in different cultures. My prediction is that individuals and teams are going to function at two contextual environments, in their local cultural environments, in which they activate their local identity and display emotions in line with their cultural norms, and at the same time, they also function in a global context, in which they activate their global identity and display emotions similar to others who come from other cultures.

6. **You co-authored an interesting paper in 2005 highly relevant to entrepreneurs in the world of international business called *Culture and International Business: Recent Advanced and Future Directions*. It looks into the changing nature of international business. In particular, you ask if global business will change, and if the various differences in values and culture might create a standard set of 'business practices'. The paper was meant to draw out the basis for future directions of research. What future directions did you derive from the research?**

Similar to my answer to point #6, we are going to live in two contexts – the immediate local cultural context, and the more distant, global work context. As a result, we are going to develop two identities – local and global identity, and two sets for emotional and behavioral norms – one for the local culture and one for the global culture. Hence, the world is going to be more complex and individuals will have to learn which emotion to display and which identity to activate, depending on the salience of the local versus global context. Furthermore, it will be interesting to study which identity dominates in case of identity conflicts.

7. **In a hypothetical perfect world with plenty of funding and time, and if guaranteed an answer, what single topic would you research?**

I would study how to enhance the level of creativity and innovation in a global work environment of a growing complexity, and through cooperation, in order to come up with solutions to human problems in all the spectrum of life, in all parts of the world, and to share the benefit of innovation in a more egalitarian way.

8. **What do you consider the controversial topic in your field at this time? How do you examine the issue?**

The controversial topic in my field pertains to the increasing level of diversity in the workplace, as a result of globalization, and to the impact of team and organizational diversity on innovation.

I initiate studies on the meaning of creativity in different cultures, and studies on the interaction effect of culture and the work context on creativity. For example, in our 2013 paper we studied the level of innovation of culturally diverse teams versus homogenous teams when working under very specific instructions versus general ones and we found, that the level of creativity is higher under general versus specific instructions for both culturally heterogeneous versus homogenous teams. This is not the case when performing and "execute" task that has one correct answer. In this case, homogeneous teams work better than heterogeneous teams when performing a task under general instructions, but there are no differences between the two types of teams when working under specific instructions.

9. **You have spent time speaking on the plights of women in the academy. In particular, the low enrollment and graduation rates of women in science, technology, engineering, and mathematics (STEM) fields. What is the set of causes for this plight?**

We are in a period of change from a traditional society with a clear sex role differentiation – women at home, men at work, to a modern egalitarian society with equal opportunities to make choices for both men and women. The change is already observed in medicine, where the percentage of men and women is equal today, but there were times when women were not allowed to be admitted to medical schools. But another related reason for it is that women have a higher social motivation than men, and better social skills than men, and as a result, they are more attracted to jobs that allow them to interact with others and to contribute to the society. Today we find that the gap between technology and socially oriented work is getting smaller. For example, there is a strong relationship between having IT knowledge and skills, and facilitating social interactions via social networks. Also there is a strong relationship between medical instruments and helping people to improve their quality of life. In addition, there is a shortage of engineers and scientists today, and the job opportunities and the high salaries relative to social science jobs, will eventually attract more women and companies will pay more attention to make the workplace friendlier to women.

10. If any, what responsibility do academics and researchers have for contributing to society and culture?

Academics and researchers have a huge responsibility for contributing to society and culture. They are responsible for the education of the new generations, they are responsible for developing new knowledge in all fields of science and technology, and consequently, they are responsible to the quality of life and well-being of humanity.

11. Who most influenced you? Why them? Can you recommend any books or articles by them?

It is hard for me to answer it. I was influenced by different people and different books in different periods of my life. I believe that I was also influenced by the interaction with my family members and with my students as I have developed as a person, as an educator and as a researcher.

12. Where do you see your field in the next 5, 10, and 25 years? With respect to more representation of women, where do you see the demographics of men and women? Especially, what about the high-end of the achievement?

I think that the direction of our field of social sciences in general and of organization behavior in particular is going towards a higher level of complexity, a stronger emphasis on methodology, and a new direction towards studying the physiological correlates of emotions, thoughts and behaviors.

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Dr. Carla MacLean: Psychology Instructor, Kwantlen Polytechnic University

May 14, 2013

1. **What positions have you held in Academe? What position do you currently hold?**

I am currently a faculty member at Kwantlen Polytechnic University (KPU). My past positions include typical graduate student work like research and teaching assistantships and also lecturer positions at both the University of Victoria and Simon Fraser University. My position immediately prior to starting at KPU was as a Social Sciences and Humanities Research Council of Canada post-doctoral research fellow at Simon Fraser University.

2. **How did you come to this point in your academics?**

I arrived at this point in my career by serendipity. It would have been convenient if I always knew what I wanted to do and I simply executed my plan – that is not how my career evolved. Rather, I followed my interests, kept an open mind, and talked with people (all sorts). That process gave me a realistic understanding of what different career paths looked like and it also opened doors for me. My good luck led me to my career as a psychology faculty member.

3. **How did you gain interest in psychology? Where did you acquire your education?**

I asked a lot of "whys' and "hows" growing up and being an inherently social person it was very natural for me to apply that curiosity to people. Although I pursued a number of

interests in my undergraduate schooling, at a certain point psychology felt more right than the other subjects I was studying. Once I selected psychology I never looked back.

My university education began at the University of Victoria, then to Saint Mary's University in Halifax to acquire a MSc. in Industrial/Organizational psychology, and then back to the University of Victoria for my Ph.D. in experimental psychology. My education was not as continuous as my brief description above would suggest. I took opportunities during these years to work, travel and ultimately cultivate experiences and a sense of self outside of the institutions I was studying in.

4. What kinds of research have you conducted up to the present? If you currently conduct research, what form does it take?

I enjoy research. My past and present research merges the areas of forensic and occupational health psychology. Although my interests are diverse, the core of my research pursuits is the understanding of how: (i) people assess one another and (ii) we might reduce bias and/or maintain accuracy in people's assessments of situations, information, and individuals. I typically pursue these core interests in the applied areas of eyewitness memory and investigator decision making to an adverse event (industrial incident or forensic).

Historically my research on investigator decision making has explored ways to minimize confirmation bias in industrial investigation. People who investigate industrial events are

typically foremen, supervisors or health and safety professionals of the organization in which the accident occurred. The contextual knowledge that comes with familiarity with the work environment can result in biased decision making as investigators may seek information that supports their preconceived notions. The eyewitness to an industrial or criminal event is equally as important a member of the investigative dyad as the investigator. Hundreds of studies tell us that eyewitness memory is fragile, malleable, and susceptible to forgetting, even in optimal conditions. I study factors that may lead to inaccurate witness recall post-event and/or factors that can help maintain the quality and quantity of a witness's information. In collaboration with others, I have researched: the effects of witness fatigue and misinformation, access to memory of a central instance of a repeated event, post-event information on investigator and witness identification evaluations, and psychologically-based incident report forms.

5. **Since you began studying psychology, what do you consider the controversial topics? How do you examine the controversial topics?**

There are many areas of controversy in psychology but the areas that directly relate to my research are: how we as researchers try to ensure we are drawing reliable and valid findings from our studies, the role of personal responsibility (i.e., human error) in event causation, and the influence of post-event suggestions on memory (my co-contributor to this In-sight issue, Dr. Elizabeth Loftus, is likely a better candidate to tackle the implications of this last topic).

To address the first issue in the above list, because I am aware of the possibility of spurious results I take small steps to try to minimize error in my reporting of results, e.g., replicate when I can, use large sample sizes when possible, show restraint when talking about the implications of my findings. The other controversial area that I mention above is the role of personal responsibility in event causation. People's views regarding human error can fall on a continuum from "the event was caused by a rogue employee who made an inappropriate decision" all the way to "there is no such thing as human error, all inappropriate worker action is a result of latent failures within the system." A great deal of time has been spent discussing the most productive viewpoint to enhance safety. This controversy touches my research because the view of human behavior taken by the investigating officer/organization may have implications regarding how information is sought and interpreted during an investigation, as well as, what the organization will do with the investigative findings.

Last, one area that I do not study but I follow closely is deception detection. This is a fascinating area that has evolved rapidly over the last few years. Researchers are pursuing different features of deception such as emotion and cognitive load to try and generate effective tools to enhance detection e.g., asking for the narrative in reverse order, asking about unanticipated features of the event, the strategic use of evidence or the emotion based micro expression research. This is a fun area of study that is always interesting to read about.

6. **If you had unlimited funding and unrestricted freedom, what would you enjoy researching?**

Well if there were really no constraints (and we could ensure no consequences for the people participating) I would move my research into a more externally valid framework. That is, I would expose people to high stakes situations and manipulate their physiological and psychological state to see how these factors affect their recall and decision making. It is hard to find research done in high resolution environments but a fairly recent collaboration of note is Loftus's and Morgan III who used military recruits in survival school as their participants.

7. **For students looking for fame, fortune, and/or utility (personal and/or social), what advice do you have for undergraduate and graduate students in Psychology?**

I am hesitant to answer this question as I have neither fame nor fortune and my utility is likely up for debate (just kidding). My personal experience has taught me a few general principles that worked well for me: first, do your homework so you have a good understanding of the scope of what it is you are considering, second, talk with people and find out the pros and cons of any given situation/position, third, be open to feedback – it is rarely intended to insult rather it is usually offered as a means to help you grow, and last, get hands on experience when you can. If you have a career in mind, talk to people who hire for that job and find out exactly what they require as this will enable you to target your education and experiences more effectively.

8. **Whom do you consider your biggest influences? Could you recommend any seminal or important books/articles by them?**

The people who influenced me the most were the people I worked directly with during my graduate training, Dr.'s Elizabeth Brimacombe, Stephen Lindsay, Don Read, and Veronica Stinson. Each one of these academics modeled a unique approach to study, research, and networking and from each relationship I took valuable lessons. On a purely scholarly note I would say that the most influential author for me over the years has been Daniel Kahneman. His work encouraged me to think in depth about how we synthesize information and this ultimately helped me script my dissertation research. I hear Kahneman's recent book, "Thinking Fast and Slow," is very enjoyable and accessible reading (which I look forward to getting to when my busy first year of teaching is behind me!). The other authors I watch with interest tend to be more applied researchers, to name just a few, Elizabeth Loftus, Saul Kassin, Christian Meissner, Dan Ariely, Itiel Dror, Garry Wells, and Aldert Vrij.

9. **You may consider many areas of Psychology important for academics and non-academics. Even so, whether one or many points, what do you consider the most important point(s) of Psychology as a discipline?**

Humans are a marvel – we habituate but then adapt with lightning speed. We are frugal with our allocation of resources yet act with close to optimal performance with little (or

no) executive effort. In psychology we recognize that the complex nature of people cannot be studied using only one perspective, we use a biopsychosocial approach and this is our strength. This multifaceted approach not only broadens our understanding of human behavior from within psychology but facilitates collaboration with researchers from other disciplines (e.g., medicine, cultural anthropology). Being open to fresh perspectives and approaches may ultimately provide us with new and exciting understandings into human behavior.

Dr. Elizabeth Loftus: Distinguished Professor of Social Ecology, and Professor of Law, and Cognitive Science at the University of California, Irvine

April 22, 2013

1. **What is your current position at the University of California, Irvine?**

My title is Distinguished Professor. My main appointments are in a couple departments. One is Psychology and Social Behavior. Another is Criminology, Law, and Society. Then, I am also Professor of Law.

2. **Where did you grow up? What was youth like for you? What effect do you feel this had on your career path?**

I grew up in Los Angeles, not very far from UCLA.

I would say it was peppered with tragedies. My mother drowned when I was 14 and my brothers were 12 and 9. A few years later, our house burned down, and we had to live somewhere else while it was being rebuilt. Through all of this, I managed to keep studying and got into college.

Well, I feel a little like it contributed to my workaholic ways. You know, just keep working, working, working, and feeling a sense of accomplishment. Then, distract yourself from painful thoughts. Since I do not do psychotherapy that is just an armchair self-analysis.

3. **Where did you acquire your education?**

I went to college at UCLA. UCLA was close by to where I lived. UCLA was probably not the greatest idea since I lived about a half-mile away, and I ended up living at home. I graduated

from UCLA and then ended up going to Stanford for Graduate School. I got my PhD in Psychology from Stanford.

4. **What was your original dream?**

At some point because I had a double major in mathematics and psychology, I thought I might teach mathematics. Something like high school or junior high, but that is not what I ended up doing. I don't know if I had a dream. I just kept on with school, until I had a PhD and became an assistant professor.

5. **How did you gain an interest in Mathematical Psychology? In Chapter 3 of *Do Justice and Let the Sky Fall*, Dr. Geoffrey Loftus recounts your hemming skirts and keeping familial correspondence up to date during your Graduate School training at Stanford. When did you realize Experimental Psychology was the new dream for you?**

I did that because I was bored with mathematical psychology. I later happily discovered memory, ha! It's what ultimately I would get a little more passionate about. I ended up going to Graduate School in mathematical psychology because I thought that combining my two majors in what would be a perfect field. I was not in the end taken by it. I did other things while listening to, in one ear, the talks, or presentations that were being made.

6. **You have published 22 books and over 500 articles. You continue to publish new research on an ongoing basis. What have been your major areas of research?**

Well, most generally it is human memory. More specifically, I studied eyewitness testimony for a long time. I studied people's memory for crime and accidents, and other complex events that tend to be legally relevant. Even within that area, I studied how memories can change as a result of new information that we are exposed to. I did hundreds of experiments studying everything you would want to know about memory distortion in that kind of context. In the 1990s, when I started to get interested in what would be called 'The Memory Wars,' the debate about psychotherapy and whether some subset of psychotherapists was using highly suggestive procedures that were getting patients to create entirely false memories. I, with my collaborators and students, established a paradigm for studying the development of what we would later call, in a paper with Bernstein, *Rich False Memories.* Not just changing a detail here and there in memory, but actually applying people with suggestions so that they would develop these complete false memories.

7. **Your research did not have immediate acceptance among professionals. In fact, it attracted much anger, which spilt over to you. In particular, what research set the controversy? What became the controversy? How did this come to a resolution?**

I would take us back to around 1990, when I was confronted with an opportunity to consult on my very first repressed memory case. A case where someone was claiming repressed memory. It was a murder case where a man named George Franklin was being prosecuted for murdering a little girl twenty years earlier. The only evidence against him was the claim of his adult daughter that she had witnessed the murder when she was 8 years old and had repressed the

memory for 20 years, and now the memory was back. It was in the context of that case that I began to scour the literature of what was the evidence for this kind of repression. She was claiming that she had repressed her memory of the murder. That she had repressed her memory for years of sexual abuse that the father had supposedly perpetrated on her. I could really find no credible scientific support for the idea that memory works this way. That you could take years of brutalization, banish it into the unconscious, and be completely unaware of it by some process that is beyond ordinary forgetting – and that you could remember these experiences completely accurately later on. And so I began to ask, "Well, if these memories aren't real, (If there is no credible support for the idea that memory works this way) where could these memories have come from?" I began to dig through literature, and examples, ultimately court cases, and would discover that some of these memories were being created by highly suggestive psychotherapy procedures. When I began to speak out about this issue, then people began to get mad, and for those who got mad, this was something for whom repression was one of their treasured beliefs. The repressed memory therapists and the patients they influenced.

Early in my interest in memory distortion, I was thinking about legal cases. In fact, my earliest experiments were designed to map onto what happens when a witness sees an accident or a crime, and then is later exposed to some newer information about that experience, e.g. talks to other witnesses, is questioned in a leading or suggestive fashion, or sees media coverage about an event, my research modeled after that real-world situation.

Some things have happened in the law. In the eyewitness cases, because of many, many psychologists' work, some jurisdictions have revised the way they handle eyewitness evidence in

a case. Some courts have suggested that, and recognized the scientific work by devising new legal standards for handling eyewitness evidence. That's been a change, and a fairly recent change. And then in the repressed memory cases, I think some jurisdictions have recognized now that this whole claim of massive repression is highly controversial at best. Some courts have ruled that it is too controversial for the cases to go forward. You know, one day we may prove that repression exists. It has not been proven. It is my opinion that we should not be throwing people in prison based on an unproven theory.

8. Subsequently, you took the role of expert witness in a number of important, controversial, and intriguing court cases. What are some of the court cases? Can you describe some of the more memorable moments with individuals involved in them?

Many of these cases involve people no one has ever heard of, of course, I have worked, and consulted, on some famous cases involving people like Michael Jackson, Martha Stewart, and Scooter Libby – a politician in the United States. I think some of the more memorable ones are people looked at accused of crimes convicted based on somebody's memory when these people are either definitely innocent or probably innocent.

I think a memorable one was a man named Steve Titus, who was charged with rape based on the testimony of an eyewitness who somehow in the course of being interviewed went from not being particularly certain to being completely certain it was Steve. Steve Titus was convicted. Ultimately, he was able to get a journalist to show that another man committed these crimes. So Titus was freed, but he was very, very bitter. He had lost his job. He lost his

fiancé. He lost his reputation. He lost his savings. He filed a lawsuit against the police and just as that case was about to go to trial, he woke up one morning and doubled over in pain and died of a stress related heart attack at 35. That is one of the saddest cases I have ever encountered.

If you want to write about one up in Canada, you might write about the teacher Michael Kliman, who, based on claims of repressed memory, had to go through three trials up in Vancouver before he was freed. I would bet my house the man is innocent.

9. What is your most recent research?

I started a line of work with Dan Bernstein and a couple of Graduate Students. We were looking at the repercussions of having a false memory. If I plant a false memory in your mind, does it have consequences? Does it affect your later thoughts, or intentions, or behaviors?

We started by trying to convince people they had gotten sick as children by eating certain foods. We succeeded in persuading people that they got sick eating hard-boiled eggs and dill pickles, and we did it with a fattening food, namely strawberry ice cream. Then, we showed that it could effect, not only what people thought they wanted to eat when they went to a party, but what they actually ate when you put food in front of them. Bernstein has gone on with some other collaborators to do further experiments on how it effects eating behavior. Most recently we have published a paper with collaborators showing these kind of suggestive manipulations work not just with food, but also can work with alcohol. We can plant false memories that you got sick drinking vodka and you don't want to drink vodka as much.

That's one line of continuing work.

For instance, in *Asparagus: A Love Story*, we described a study that showed that you could plant not only a getting sick memory that people then want to avoid. You could also plant a warm, fuzzy memory for a healthy food, and then people want to eat it more.

10. If you had unlimited funding and unrestricted freedom, what research would you conduct?

I am not sure if I want to conduct it, but with unlimited funding and no worry about ethics, ha! You could maybe do the kind of experiment to explore whether massive repression really occurs or it doesn't. Where you could be able to expose people to prolonged brutalization, and really get a chance to study them thoroughly, but ethical concerns would prohibit that kind of study.

11. Currently, you are on the executive council for the Committee for the Scientific Investigation of Claims of the Paranormal – or CSI for short. What role do you play on the executive council? What is the core message of CSI?

I am a fellow of the CSI. Periodically, I give talks at various conferences that the organization holds or I might write something for the Skeptical Inquirer. But I am so busy with so many organizations that I don't play a large role in the executive council. I mean, other people may have been providing more input to what to bring to the conferences or activities that the

organization might engage in, but I am on so many committees and boards that I am spread a little too thin to spend too much time at one.

It's an organization of people that are pro-science, against pseudo-science and flimflam. Trying to expose efforts to manipulate people into believing or thinking things that might be dangerous, harmful, or untrue.

12. Since you began studying psychology, what do you consider the controversial topics in Psychology? How do you examine the controversial topics in Psychology?

That is a big question, and I do not get into all of them. I've got my own little area in memory and memory distortion. I know a lot about the science of memory and lay beliefs about memory. I sort of tend to focus my efforts there. There are many controversial areas that one could look at, but you are going to have to find a different expert to talk about some of the other ones. A related one to the one I care about is using facilitated communication with autistic kids. There is controversy about vaccinations. I don't think it is particularly controversial. There is controversy about the human contribution to climate change. I don't think there is much of a controversy. You can find a few people out of the mainstream.

13. How would you describe your philosophical frameworks inside and outside of Psychology? How have your philosophical frameworks evolved?

I would say one of the things, and this is one of the great things about training in psychology, even if you do not go on to teach psychology or even to be a psychologist in your professional life. It teaches you a way of thinking. It teaches you to be thinking about, "What is the evidence for any claim that somebody might try to fob off on you?" We know not just how to ask, what is the evidence? But really, what exactly is the evidence? What kind of study was done? Was it an experimental study? Where you and say something about causation. It is it just correlational? Was there a control group? How well was it done? Is the sample size sufficient? What were the statistical results? We know how to think about evidence. That is one of the gifts that experimental psychology, the study of psychology, research methods in psychology, has given to people who have taken the time to expose themselves to it.

14. For students looking for fame, fortune, and/or utility (personal and/or social), what advice do you have for undergraduate and graduate students in Psychology?

It certainly helps if you can find some research to get involved in. As an undergraduate or graduate student, find some interesting research to get involved in. If you can feel a little passion about it, it can keep your motivation up to keep working hard. I think it is very helpful for students to try to work with faculty members, where you are working on something the faculty member is interested in, and hopefully with a faculty member is generous about publications with students. Having scientific research under your belt can open doors for you. It can get you into Graduate School. It opens doors to jobs. It can open doors to advancement in your field. Anything that you can do to beef up that aspect of your experience is bound to be helpful.

Once you get that under your belt, you might want to get something in a magazine or a journal.

15. You have earned numerous awards, but the AAAS award for Scientific Freedom and Responsibility seems most relevant to me. In your acceptance speech you state, "We live in perilous times for science…and in order for scientists to preserve their freedoms they have a responsibility…to bring our science to the public arena and to speak out as forcefully as we can against even the most cherished beliefs that reflect unsubstantiated myths." I quote this in an interview with Dr. Daniel Bernstein and ask, "How important do you see criticizing 'unsubstantiated myths' in 'perilous times' for Science?" He says, "*I think that this is excellent advice. Science has a responsibility to "give back" to the communities and cultures that invest in it. Scientists can and should correct myths whenever the opportunity arises."* Can you expand on this idea of scientific responsibility to society?

You know, I think he put it beautifully. Not everyone has to do everything, I think collectively we can all contribute to giving back to the society that supported the scientific work. Some people are going to be good at getting the experiments done and published in journals, and they're uncomfortable speaking to the press or speaking in the context of legal cases. Other people are comfortable doing that. Some people are not comfortable writing for lay audiences. They only want to write for concise scientific journals. Collectively, I think there is something of a responsibility in an ideal world for people to want to give back.

16. Whom do you consider your biggest influences? Could you recommend any seminal or important books/articles by them?

Back in Graduate School, I had a professor that I did some research with on semantic memory that really taught me how to be an experimental psychologist. To be able to design a study with him, conduct and gather the data, analyze the data, and write up a publication. That was a great benefit for me. That collaboration was with a social psychologist named Jonathan Freedman. That was an important influence in terms of turning me into an independent experimental psychologist. I would say, in terms of people that I have never met whose work has probably set the stage for the tradition in which I work, Bartlett from England who was famous for his work on reconstructive memory. I see my work in the tradition of reconstructive memory. He was an important forefather.

If people want to read about memory distortion, I think they may want to read something more recent. I have a book by Brainerd and Reyna. It is rather advanced, but it is called The Science of False Memory. It is sort of everything you would ever want to know about false memories up to 2005 or whenever that book was published. For your readers, if they wanted something easy and fun for reading, I would recommend The Memory Doctor in Slate.com written by Will Saletan. That will give you a small slice of memory research. If you want more, you could probably read *The Science of False Memory*.

17. What do you consider the most important point(s) of Psychology as a discipline? In particular, what do you consider the most important point about cognitive psychology?

I do not think I want to go there. (Laughs) There are just too many. I have just been focused on the study of memory. I think the study memory distortion is an important area because of its practical and theoretical implications. I think some recent work in a completely different area has to do with learning and memory, in a classroom or an educational setting. The work that shows that if you test people, they learn better than if you just ask them to study again. All these findings on *testing effects* are interesting and we will see more work in that area.

This of course has many people interested in memory and neuroscience, and brain imaging. It is not something I do, unless I am collaborating with someone who does, but we will see where that will lead. It is certainly the subject of a lot of current research.

18. Three years ago, I informally asked Dr. Anthony Greenwald, "Where do you see Psychology going?" ***He said the frontier lies in cognitive psychology and neuroscience. However, a first generation of researchers, like the first round of soldiers marching out of the trenches, will fall – making all the necessary mistakes. After that point, the next generation of researchers will have learned from those mistakes to make deep progress.*** **In the same stream of thought three years later, "Where do you see Psychology going?"**

That is interesting because he has been quite successful with the implicit association test and all kinds of ramifications in uses of it, but he does not seem to be going in a neuroscience direction. However, he is a smart guy, whose speculation I would invest in.

People are enamored with this neuroimaging stuff. I do see a lot more research. I was about to say progress, but I do not know yet. The neuroscience of cognitive psychology, there has been a lot of discussion in our interdisciplinary teams, people seem to be enamored with the idea that if you bring together people from all different types of perspectives and fields, then you can come together to tackle problems. Will we see more of that – more funding of those type of enterprises? More research, more publications, involving these large interdisciplinary teams. It is a speculation, but it is an educated one given how enamored people seem to be of this notion.

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