

Di Qi

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In Memory of Andy Majda

Andy Majda was my Ph.D. advisor and later Postdoctoral mentor. He was a great mathematician, sharp thinker, enthusiastic teacher, close collaborator, and most of all a true friend with an ardent heart. No doubt Andy has left an indelible mark on me in my scientific pursuit as well as in my perception of life.

I first met Andy when I was an undergraduate student and was uncertain about what I would pursue academically. I can still remember the excitement I experienced in my first meeting with Andy in the small classroom in Fudan University. Andy owned an imposing manner that left you an unforgettable impression at the first sight of him. As a young student, I was immediately fascinated by his mastery of expertises in the vast range of topics in both pure and applied mathematics. Andy talked about many interesting problems he was working on in vortex flow and turbulence. He passionately introduced me to the wonderful world of mathematical models and analysis in atmosphere and ocean systems. I got ultimately attracted by his artistic way of unfolding the essence of the deep mathematical equations in a most beautiful form and clarity, which suddenly became easy to understand in my then limited knowledge.

I really got to know Andy several years after I began to work with him. When he first became my Ph.D. advisor, he was for a long time the strict, critical, tough professor who would always point out your essential problems in the most relentless way directly in your face. In the beginning, it came near to torture of enduring his long-time lecturing, and admitting defeatedly that he was indeed correct in the argument. The experience had become so frustrating that I cannot remember how many times I was told ‘you should look at my paper in so and so’ after I told him with excitement some ideas I came up with and thought would be brand new. ‘He

crushes you’, as I’m told by many, ‘then he crushes you again in much the same way.’ Andy was confident of his talent and absolutely not shy about it. He applied it in the hard way to force you to learn and improve. Ultimately, Andy inspired me to discover the better version of myself.

During the years working with him, I gradually discovered the more colorful facets of Andy. Through our countless discussions and meetings, I was amazed by the functioning of his magical mind to fast digest and employ new ideas with skill. He was always eager to spread his knowledge and share his thoughts with the people around him. His curiosity expanded well beyond the world of mathematics and science, and to almost everything.

I remember one summer when Andy chose to stay on campus for longer time and crack some problem we were working on together. The months were intense and filled with pressured long-term discussions starting early in the morning. However, in the afternoons, we would always go together to Washington Square Park, where Andy would treat me with fine hazelnut ice cream from a favorite shop of his. I enjoyed these relaxing moments of the day while Andy opened my eyes with his rich life stories. It was very refreshing and stimulating after the stressful scientific sessions. He knew the best way to maintain a most productive work flow and implicitly guided me to it. I had already learned so much from Andy before I realized it.

I learned stories about the struggles he had suffered at a very early age and the hardship he had to fight through as a young child that defined his character. He also drew me to the many true charms in New York City which otherwise I would never be able to realize by myself. He introduced me to his favorite restaurants near the campus and we talked about math and many other things beyond. I learned fascinating stories about the hidden history in Greenwich village. Andy possessed a remarkable memory and he described to me the likes of the places he had frequented in the early years when he was a Courant Instructor. It was like a vivid movie disclosing to me the brilliant people and scenes I had no chance to experience personally. This was when I saw the tender heart behind his fearsome hard shell. In another time, he surprised me with a very deep interest in Chinese culture and literature. We chatted about novels by Yan Lianke, a Chinese author whom as it turned out both of us enjoyed reading, while I could hardly discuss with many of my native Chinese friends.

In the later years when his health had already begun to decline, Andy remained highly productive, reaching higher in his scientific achievements. Even with his health gradually getting worsened, Andy displayed great vitality to continue his everyday scientific routine. It was well-known that Andy always showed up earliest in the morning in his office than anybody else. He commuted to NYU from his Princeton home every week, and never stopped the weekly scientific meetings with all of us, his students, postdocs, and colleagues at Courant Institute. He forced his way overcoming the great pains and showed little sign of his suffering. He was able to continually discuss science with different people on vastly different research topics tirelessly from morning till late afternoon. It is still a wonder to me how Andy could smoothly shift subjects in his many ongoing projects and stay sharp to point out the mistakes I made almost immediately.

Besides the numerous scientific achievements, it is his sheer strong-minded determination to keep on going regardless of what that leaves me the deepest impression. Indeed, Andy managed to keep working to his last minute. I kept receiving continuous valuable research advices from him throughout his deeply suffered final days during the pandemic shutdown.

I'm lucky to be guided by Andy with his insight, energy, and intellectual power at the early stage of my career. I will forever miss the many exhilarating discussions around the long couch in his office, with warm sun light pouring in through the wide window panes, where so many brilliant ideas had emerged; and the casual chats around the dining table in his house, eating delicious cakes his wife Gerta baked that we enjoyed so much. Andy remains a persistent inspiration and gives me courage to carry on. We will all live in the much richer world Andy shaped for us.