

Nobel Autobiography

Angus Deaton, Princeton, February 2016

Scotland

I was born in Edinburgh, in Scotland, a few days after the end of the Second World War. Both my parents had left school at a very young age, unwillingly in my father's case. Yet both had deep effects on my education, my father influencing me toward measurement and mathematics, and my mother toward writing and history.

The school in the Yorkshire mining village in which my father grew up in the 1920s and 1930s allowed only a few children to go to high school, and my father was not one of them. He spent much of his time as a young man repairing this deprivation, mostly at night school. In his village, teenagers could go to evening classes to learn basic surveying and measurement techniques that were useful in the mine. In Edinburgh, later, he went to technical school in the evening, caught up on high school, and after many years and much difficulty, qualified as a civil engineer. He was determined that I would have the advantages that he had been denied.

My mother was the daughter of William Wood, who owned a small woodworking business in the town of Galashiels in the Scottish Borders. Although not well-educated, and less of an advocate for education than my father, she was a great story-teller (though it was sometimes hard to tell the stories from gossip), and a prodigious letter-writer. She was proud of being Scottish (I could make her angry by saying that I was British, and apoplectic by saying that I was English), and she loved the Borders, where her family had been builders and carpenters for many generations. The region has a rich history; centuries of cattle-stealing along a lawless border left many good tales, and the memories of (mostly losing) battles against the English were well tended, particularly

Flodden Field, fought in 1513 but which felt more like 1913. My mother knew and could sing many of the local songs. Sir Walter Scott's Abbotsford was nearby, and he is said to have visited an ancestor in the cottage where we lived after we moved from Edinburgh; the house had once belonged to my great-grandmother. I have a vivid memory of a long walk in the woods near the River Tweed guided by the friend—a printer in Galashiels—who had introduced my parents to one another during the war. He had a spellbinding gift of turning his knowledge of local history into long rhyming ballads, composed in the moment, and he would point out places where someone had done something, or had something done to them (“and when her legs were cuttit off, she fought upon her stumps”), a mesmerizing treat for an eight-year old. In late afternoon, suddenly revealed in a clearing, but quite invisible from anywhere else, stood an enormous sandstone statue of Sir William Wallace. I suspect that today's relentless meritocracy, whatever its other benefits, would not leave my historian minstrel as a printer in a small Scottish town.

In Edinburgh, where we lived until I was nine, I attended James Gillespie's Boys School a few hundred yards from our home on the edge of the meadows, a large open space south of the center, then still dotted with wartime “allotments” where the locals grew vegetables. I didn't care for school much—it was very strict, corporal punishment in the form of the “tawse” was common and unpredictable, and I was often afraid—but I believe that I did well enough; indeed, my mother always regretted that I had not stayed long enough to become the “dux,” as the best pupil was called. We learned a lot of history and geography, as well as arithmetic and reading, with lots of drill.

The educational highlights I remember were not in the classroom. My father spent a lot of time with me when he could. He taught me how to take square roots, a skill

I have retained, but do not use often, except to check that I still remember. At weekends, he took me to Edinburgh's great zoo, to museums, to the botanical garden (with a giant hothouse, and whose bus stop was right by Robert Louis Stevenson's childhood home) and to the harbor at Granton, which had a fishery fleet (trawlers unloading fish and loading ice and salt), a lighthouse supply ship (the Pharos), and which imported esparto grass from Portugal for making high quality paper. Looming in the distance over the eastern end of the botanical gardens was an enormous castle, adorned with hundreds of grotesque gargoyles, which my father wistfully explained was Fettes College, Scotland's most exclusive (and expensive) school where he had (impossible) dreams of sending me. I was lonely when my father had to go on long civil-engineering assignments away from home, and I remember being even more lonely, and desperately bored, when I caught scarlet fever, and had to spend seven weeks in a darkened room, with no books and only an infinitely dull radio for entertainment. I detested Mrs. Dale's Diary ever after, and was glad to hear of its end in 1969. Even my beloved jigsaw puzzles were off limits. Boredom and loneliness have been familiar visitors throughout my life, though I have come to (reluctantly) accept that the turning inwards that they bring is linked to creativity, at least for me.

In those days, children could walk unattended to museums and libraries, as well as being sent to the local grocery store to buy food, or as we said to "do the messages." What was then called the Chamber Street Museum was a mecca of exotica, mummies, totem poles, taxidermy, science, exhibits that moved when a button was pressed, clocks, ships, and mines. The children's library on George IV bridge had both delights and dangers; my parents did not read and could not guide me, though they once tried to cut off my Biggles addiction. I read much that terrified a seven-year-old, Edgar Alan Poe's

Pit and the Pendulum and Dickens *Christmas Story*, as well as the much more reliably enjoyable Stevenson. I dreamt of coral islands, with or without treasure, of adventures in the South Seas, and tried to imagine how long it would be before I would visit Africa and India, still (mostly) colored a proud pink on the maps of the 1950s.

In 1955, my father qualified as a civil engineer, and we moved to the village of Bowden in the Borders. The village is old; it has a 12th century church. The ruins of a fundamentalist Free Church were still present in the center, but the pub had closed a century before, though it was often referred to. I loved the escape from the city, and Dave Preston, a plumber who worked for my father and who was a member of Scotland's international fly-fishing team, took me fishing. Like nearly all other fly-fisherman I have ever met, he was far too busy fishing to teach me; it is not for nothing that many states in the United States have laws that prohibit paid guides from fishing themselves. Fly-fishing, like boredom, which it frequently resembles, has provided me with thousands of hours of dreamtime, where the inchoate muddle in my head is given a chance to sort itself into something that might resemble an idea. Fly-fishing in Scotland, at least for trout, was inexpensive, though not free, and I recall that the cost of the license was an occasional source of conflict at home. There never was much money and my father worried about it often.

My sister Mairi and I went to the local school in Newtown St. Boswells. I passed the dreaded exam at 11 plus, and went to High School in Hawick, a knitwear manufacturing town about 15 miles away. (Those who did not pass the exam were doomed to three years of gardening, cooking, or car repair depending on sex. Mairi, four years younger, elected to go to High School in Kelso.) At Hawick I learned Latin (a Bowden villager explained to my father, there were three languages on the curriculum,

Latin, French, and “Algebra”) and its precision greatly impressed me. The declension in Latin frees word order from the burden of carrying meaning as it must in English and so gives great flexibility to poetry and rhetoric. The powerful idea that precision and beauty could be combined came from my Latin classes, though Algebra and the King James bible played a part too, even if the bible was less strong on the precision.

It turned out that Fettes College admitted two Foundation Scholars a year (out of a class of about 90), and several teachers at Hawick High School donated their time to train me for the competitive examination. They must have done this out of dedication to teaching; certainly my father had no money to pay them. I worked very hard over many months, becoming quite sick at the time of the exams, but won one of the scholarships. Even then, the incidental expenses were a strain for my family, and there was some difficulty as I tried to keep up with much richer boys. I remember being the only boy with a Scottish accent (though it seems likely now that there were a few others) and the social life was not always easy, especially at first. Fettes strengthened an older feeling that ordinary Scots like me were not full citizens in our own country, compared with a landholding English elite who spoke with a different accent, and who set boundaries that I could not cross (though perhaps I was too much influenced by the access rules for trout fishing). In any case, the feeling of being an outsider is one that still comes more easily to me than it should. And it is not without advantages; it helps me not back down when I am trying to argue a position that only I believe. (Of course, it is less helpful when that position is wrong.)

The teaching at Fettes opened up new landscapes in many directions. I specialized in mathematics and physics after two years, but that only opened up time for other activities. I continued to play the piano (with some ability), the pipe organ (not so

well), and the double bass (not well at all, but it got me into the orchestra.) I played rugby seriously for a while, which helped get me into Fitzwilliam College at Cambridge, but I probably spent most time in (entirely optional) English classes. This lack of forced learning was of great benefit to me; I learned to browse, working only on things that seemed interesting, guided only by my (sometimes temporary) enthusiasms and by always willing and talented teachers. When I later became an economist in Britain, I had the same freedom; in the United States, newly minted economists must first find a field and a peer group, and then stick to them relentlessly in order to get a job, and to keep it. In Britain, I never had a field, I took no courses in economics, and escaped going to graduate school, so I could continue to work as I had done at Fettes, browsing across areas, learning new things that often seemed irrelevant, but were always interesting, new, and which with (perhaps not so) surprising frequency, would eventually come together to open up new insights. For many years, I regretted my lack of formal training, envying my peers who had taken tough courses, and who understood things that I did not know existed, but feel now that those regrets were misplaced. When I learn something that I want to learn, and do it my own way, I often make mistakes and it is usually slow, but when it is done, it tends to stick (like taking square roots), and there is always the chance that I find something that is not so well known after all. Fettes also taught me that people like to share what they know, and that they love to be asked. Being willing to confess ignorance and to listen is a fast and joyful way to learn; I sometimes worry that our competitive American graduate schools make such confessions difficult for many students.

Cambridge

This happy story fell apart when I got to Cambridge. Mathematics, it turned out, was not what I wanted to do if I had to do it fulltime, especially in a teaching program that was appallingly badly organized, and with fellow students who were better and much more dedicated mathematicians than I. Shopping around among other areas was fine if you were doing well in the subject that counted, but I was not. Rugby collapsed too in the face of the wanton and sometimes sadistic violence of those who took rugby seriously in my college. I requested a transfer to history of science, but was denied by a risk-averse advisor; I still think that it would have been a good choice for me, even though I would not be writing this particular biography. Eventually, in desperation, my tutors told me that I had to stop doing mathematics and take up what they clearly thought of as a last resort for ne'er-do-wells, a previously unconsidered option called economics. I did so, with no expectation of anything other than a degree, and the lights came back on.

When I left Cambridge, I worked briefly at the Bank of England as part of their new graduate intake. But the Bank did not know quite what to make of graduates in 1967, and they did not have anything very useful for me to do. So I learned, perhaps incorrectly, that I didn't want to be a banker, and I have never since left academia. I returned to Cambridge as a Research Assistant for my college economics tutor, Jack Revell, who was constructing wealth accounts for Britain. I spent several months in dusty archives, copying down information on the assets of friendly societies; I did not mind the work, and sometimes even regret today's easy availability of data. It is impossible not to think about the numbers, however dusty, to wonder what they mean, to look for patterns, even to test half-formed hypotheses, and when they are assembled into something that can be analyzed, I am protected from some of the stupider mistakes that are all too easy when I know nothing about the data. Today's equivalent—and it is

undoubtedly better as long as it is done—is the ability to use computer graphics to visualize the data; I do not miss the graph paper, the erasers, and the endless starting all over again. But I never quite learned to use research assistants, or at least to sleep at night when they are working for me. It is not that I myself do not make mistakes, indeed I am a poor research assistant for myself, but someone else’s mistake is not lodged deep in my brain where it can wake me up in the night.

My main reason for going back to Cambridge was not academic, but that I wanted to be with Mary Ann Burnside, an English major, originally from Wichita, Kansas, via Evanston, Wellesley and Berkeley. We were married before I left the Bank; we bought a small pretty house in the village of Barton outside of Cambridge (then reputed to have many Nobel laureates), and we had a daughter, Rebecca, and a son, Adam. Mary Ann died of breast cancer in 1975, and is buried in the old churchyard in Barton. Rebecca and Adam have families of their own now, Rebecca and her son Julian live in Chicago and Adam, his wife Sabina, and their daughters Celestine and Lark live in New York. Julian, Celestine and Lark, the Deaton *barnbarn*, had the times of their lives in Stockholm, where they were much photographed and televised.

All this lay far in the future. Soon after I arrived in Cambridge, Jack Revell left to take a chair in Wales, I was rescued from the dusty archives, and largely left to myself. Which was when Richard Stone brought me into his orbit. He led a larger project in which I was nominally employed, and he somehow decided that I was a kindred spirit who could be asked, not only to run regressions and fetch numbers, but also to come to dinner and, though he hardly designed it that way, to pattern myself on him. Stone had a passion for measurement, for modeling, and for clarity and transparency in writing. He had worked with James Meade and with Keynes on national income accounting

during the war, for which work he received the 1984 Nobel prize. It was under his guidance that I first started to think about saving and about demand analysis, but the guidance came by example, not by instruction. With my own students, I have tried to do the same, though if I had it to do again, I would probably give a little more purposive direction, at least on occasion.

In those days, Cambridge was still run by the Keynesians; Joan and Austin Robinson, Nicholas Kaldor and Richard Kahn were powerful figures. Meade and Stone were there, but were less than appreciated by the Keynesians. They had little taste for the often robust and frequently *ad hominem* arguments, and kept very much to themselves; the withdrawal of Cambridge's two future Laureates taught me one of the most important lessons of academic life, withdraw from the academic politics and get on with the work. The coffee room was a place of lively conversation, often very loud lively conversation; I remember Joan shouting, "What *do* you mean, Nicky, the international *pig* standard?" having misheard "pig" for "brick." Cambridge taught me much, and gave me an acquaintance with the ideas of the intellectual left. I didn't know until many years later that there were economists to the right of the Fabian socialists, and when I came across George Stigler's piece on why the professional study of economics makes one conservative, I thought that the *Journal of Political Economy* had committed an egregious typographical error. Joan Robinson was fond of saying that neoclassical economics was an apologia for American capitalism, and while I did not believe that then (nor today), it is a perspective that is often worth keeping in mind. It was later balanced at Princeton by a distinguished colleague's fondness for declaring that "government is theft;" it is a poor political slogan, but after 33 years in the United

States, I am frequently reminded of its empirical relevance for some activities, such as crony capitalism.

Cambridge was full of good young economists around that time. James Mirrlees, Amartya Sen, Peter Diamond, Joe Stiglitz, Tony Atkinson, Christopher Bliss, Geoff Heal, Mervyn King, Hashem Pesaran, and Eric Maskin were all there or spent time there during my seven years. The first economics talk I ever attended was Tony Atkinson presenting his famous paper on inequality, and I expected all seminars to be of similar quality. When Tony went to Essex to become a professor at age 26, not only were his fellow young economists delighted at his achievement, but we were all energized by the possibilities for ourselves. My chance came in 1975, when I was offered and accepted the Chair of Econometrics at the University of Bristol. Mary Ann had died a few months before, I had two small children, and the additional income meant a lot to us.

I was still at Cambridge when I met John Muellbauer, who was a lecturer at the University of Warwick, and who had recently returned from completing his PhD in Berkeley; he had known Mary Ann there, which is how we met. We discovered a common interest in consumer behavior, and quickly found that we both knew a lot of not so well-known material, though from different perspectives, I by wrestling with the writings of Terence Gorman, then at the LSE, and he through the teaching of Dan McFadden at Berkeley; he was also much further along than I in his own writing. We became good friends, and worked together for nearly a decade.

Terence Gorman “adopted” me; he became a friend, and would talk to me for hours. I was both delighted and terrified; listening to Terence was always like a tantalizing glimpse through a mist, and feeling that, if I could only understand, many of the things I had puzzled over would be revealed. He would talk about things I’d thought

about, like representations of additive preferences, which I knew I did not understand, but I would finish up knowing only that he understood it but could not explain. Yet he never flagged in making it clear how highly he thought of me, and that, if I did not understand, it was his fault, not mine. When he invited me to talk at the London School of Economics, very early in my career, I could not have been more petrified; it was my first talk, and the audience contained not only Terence himself, but many luminaries including Frank Hahn, Dennis Sargan, Jim Durbin, Amartya Sen, Michio Morishima, Partha Dasgupta, David Hendry, Ken Wallis, Richard Layard and the eccentric but brilliant John Wise. My paper was much better than I could have known (it later won the inaugural Frisch medal from the Econometric Society), but almost all I can remember is the terror. The now Lord Layard remembers that talk too, and recalls wondering where this self-possessed young man that no one had ever heard of could possibly have come from, so I must have managed to put on a brave face.

Bristol

At Bristol, I was once again fortunate with my colleagues. The chair, Esra Bennathan, became a close friend, and was a stalwart supporter of my appointment in the face of the skepticism of those who had been professors since before I was born. Martin Browning came to Bristol as his first academic job, and we worked together on labor supply and consumer demand over the life cycle. We also hired Ian Jewitt, one of the funniest people I know, and a thinker of startling originality, as well as John Broome, who was still trying to decide whether to be an economist or a philosopher (in the end, he chose the latter). From John I learned how to think about the ethical issues underlying economics and public policy; he and Amartya Sen are responsible for a part of the way I

think about the world. The drifting apart of economics and philosophy, which were close in the 60s and 70s, has surely brought harm to both; recent signs of a rapprochement are to be welcomed.

After I visited Princeton for a sabbatical year, Orley Ashenfelter came to Bristol to visit in turn, and those years were the beginnings of a lifelong friendship. Bristol, with its long history of wine importation and many wine merchants was the first inspiration for Orley's path-breaking interest in the economics of wine. Orley's work is as original as he is and he has an uncommon curiosity about everyday phenomena, whether it be labor markets, wine, hamburgers, or prohibition. His empirical skepticism and commitment to matching theory and data marked us as kindred minds from the first time we met, at a conference in Urbino in 1976. Orley brought a young graduate student with him to Bristol, David Card, who eventually went home in frustration with Bristol's computer facilities, only to be deported to Canada at the US border. The computer arrangement was indeed imperfect, and I wrote a number of theory papers there.

At Bristol, my collaboration with John Muellbauer flourished, there, and in London, where John had moved to Birkbeck College. We worked on the development of the Almost Ideal Demand System, tinkering with candidate functional forms, trying to shape one that would be "ideal;" we came close. We also realized that we could bring a unified, and relatively new approach to consumer behavior that would be useful to others. I had good students in Bristol to try out the material, and the eventual result was our book *Economics and Consumer Behavior*. I remember that the first few key chapters were written very quickly, over a few months, and typed by our expert typing pool (how I miss the typing pool!). Each of us focused on the *other's* main areas of expertise; if we did not understand each other's ideas, how could we expect our readers

to do so? Of course, we hit diminishing returns, and some of the later chapters held us up for a long time. The collaboration with John is one of the highpoints of my intellectual life. Our time together was full of learning from each other, from threshing out things that it turned out neither of us fully understood, and the exhilaration of kids who thought we were going to show the world. We knew more than we deserved to know, or so it seems in retrospect.

Bristol is a wonderful place to live. I, my children, and my second wife Helge lived in a tea-merchant's house built in the 1840s, not as elegant as some in Bristol or nearby Bath, but whose architecture came from the age of upstairs-downstairs. There was a servants' staircase, a basement kitchen and laundry, with an "area" that gave tradesmen access to the servants. The city is small, with theater and concert halls nearby, fine wine merchants, and the spectacular countryside is very close, especially the Mendips to the south and the Wye Valley in South Wales to the west; London is a fast train ride away. But at the end of my time there, money was short in the university, departments were being closed, and a lot of unpleasant time was spent in figuring out who would be next. Princeton seemed like an idyllic paradise with fabulous colleagues, students, and wealth. As indeed it was.

Princeton

Almost the first person I met in Princeton, at a party after giving my job talk, was Anne Case. It was a memorable meeting for both of us, but it was only fourteen years later, in 1997, after winding and separate journeys for both of us, that we became a couple and were married. It is impossible today for me to imagine a life in which we are not joined at the hip; we have offices a few doors apart, we often travel together, we sometimes—

but not always—work together, we cook together, we go to the opera together, and best of all, we fly-fish together. In both cooking and fly-fishing, I was originally the teacher, but have been long surpassed by the pupil; on a river, Anne has an apparently natural but deeply mysterious gift for sensing just what is about to happen. Off the river, we have recently been working together on an important and large scale project on mortality and morbidity among middle-aged white people in the United States. A marriage that encompasses all of our lives is a rich gift.

As promised, Princeton brought collaborations with both students and colleagues. Christina Paxson came to Princeton not long after I did; she had always wanted to work in development economics, but had not been able to do so in graduate school. So we decided she would come to Princeton and that we would learn development economics together, which we did. We had a mutual interest in saving, and we worked on life-cycle consumption in rich and poor countries. We also wrote about health, mortality, consumption inequality, and a series of food puzzles. Our work is prominently discussed in the Nobel citation. Chris is now President of Brown University. This is sad for me, but not for her; she always wanted to be an administrator and she has a great talent for it.

John Campbell was also a junior faculty member at Princeton. He had worked with Bob Shiller at Yale, and had written a breakthrough thesis about saving for a rainy day and opened up many new ideas. Together, we thought about the puzzles of consumption and saving that were then in the air; I remember a pleasant day at the Engineering Library as we tried to figure out what the spectrum at zero might be, and how it might be relevant for the relationship between earnings and consumption.

At Princeton, I joined the Research Program in Development Studies, which had been founded by Sir Arthur Lewis who, although retired, was still around on a regular basis, and who befriended me; he always called me “chief,” though I have no idea why. Princeton thought of me as a partial replacement for Arthur, a daunting idea; I knew little about the subject, and my quantitative approach could not have been further from his deep historical wisdom that he had accumulated in the Caribbean, in England, and in Africa. He was unhappy in those years with how history had been marginalized in economics, and the mainstream’s lack of interest in the persistence of poverty around the world, the topic that was central to his intellectual life. So it would have been understandable had he resented me, but his attitude was entirely the opposite. Central to the development group then was Mark Gersovitz, who had worked in every area that can lay claim to being part of development economics. He was my guide to the subject, and generously shared what he knew. Another great influence on my development work, especially in India, has been my friend and collaborator Jean Drèze. Jean is a scholar and activist, who argues and agitates for policies to help the poor. He brings to our joint work an unequalled knowledge of the life of farmers and laborers in India; he is also one of the finest analytical economists I know.

Over the last decade, I have worked with the Gallup Organization, occasionally advising on data collection, but more often simply analyzing the data that they have collected on wellbeing in almost every country in the world. Gallup is an impressive and unusual company that is deeply interested in the intellectual underpinnings of its work, and in making its own contributions to science. I was introduced to them by Danny Kahneman, then my Princeton colleague, who was working on and thinking about wellbeing, and had advised Gallup on measuring life evaluation and hedonic affect.

Danny and I worked together on Gallup's data, most famously on a project that showed that, in the US, hedonic affect improved with income, but only up to a about \$75,000 a year, while life evaluation continued to respond to income even beyond that limit.

Gawker.com deftly summarized the project: science shows poverty sucks.

I have had a long relationship with the World Bank, beginning even before I moved to Princeton. The Bank's work constantly throws up good problems. Most are insoluble, but occasionally it is possible to come up with a better measure, or to see that something is not being thought about in the best way. For me, it is always useful to be presented with other people's problems, an escape from the risk in academia of small group self-referential research. In the early 1980s, I worked with Graham Pyatt, who was part of Richard Stone's team in the early days of the growth project, and who was starting the Living Standards Measurement Surveys, a still ongoing program to develop household surveys throughout the world. When Nick Stern, a friend since college, was Chief Economist, he asked me to think about the Bank's methods of measuring poverty, which greatly stimulated my interest in the topic. Most recently, I have worked with the technical advisory group of the International Comparison Program (ICP), which is currently hosted by the World Bank. The ICP is perhaps the world's most ambitious statistical undertaking, and it presents immense (and not fully solved) theoretical and empirical difficulties, all the way from index number and statistical theory, through to which prices to collect and how. The people who work on the ICP include national income accountants, subject specialists (e.g. construction, or education), survey statisticians, as well as economists. I have made several good friends and mentors in the programme, especially Alan Heston, one of the founders of the ICP, and Bettina Aten, now at the Bureau of Economic Analysis.

Finally, two institutions and their leaders have helped shape my work. One is the National Bureau of Economic Research whose President, Martin Feldstein, generated vast public goods for economics as a whole, and was a lifelong supporter of me and of my work. Much of my research on consumption and saving first saw the light of day at the Bureau, either in the macro seminars, or in David Wise's group on aging with which I have worked for more than 20 years. Marty's successor, Jim Poterba, continues the good work. At the National Institute on Aging in Washington, the late Richard Suzman's creative energy, ingenuity and enthusiasm was responsible for bringing a generation of social scientists into health research, including me; his legacy is the change and advance that he brought to both fields. His friendship is sorely missed.

I will become an Emeritus Professor at Princeton in June of 2016. To Princeton, and to its units to which I belong, the Economics Department and especially the Woodrow Wilson School of Public and International Affairs, I express my gratitude for providing me with such a profoundly supportive environment and home for most of my working life.