

My name is Robert Russell, and I received my degree from Harvard in 1965. Lester and Dale have given moving tributes to Henk's career and to the monumental contributions he has made to the profession. I'm here to add some more insights into Henk's contributions from the perspective of one who has tried to pass along the invaluable lessons he gave me as my mentor during graduate school.

My interests at Harvard were primarily in microeconomic theory. Henk didn't teach in the theory curriculum, but almost all the modern micro theory I learned was in his advanced **econometrics** class. How much easier life became when I learned about duality theory and the envelope theorem in Henk's econometrics class.

So, I went on to write my dissertation under Henk. This period of close interaction with him left an indelible mark on my career. The examples he set for me as a researcher and as a mentor have never been far from my mind in my 44 years in the profession.

Whenever I have tended to become impatient with graduate students under my mentorship, I think back about how patient Henk was with me. Whenever I fumbled or went astray, which was often, he would set me back on course by gentle suggestion and guidance, not criticism. In fact, the only time I recall criticism from him was when he critiqued my spelling. As one who went to the Wyoming state spelling finals in the fifth grade, I did take some umbrage at this; but I now realize that this probably says more about the competition in Wyoming in the 1940s than about my spelling prowess. And I came to understand, from Henk's example – and to insist on it now from my students -- that it matters not only what one writes, but also how it is presented, even to the matter of making sure the spelling is accurate.

Henk also supported me in ways too numerous to recount here. Let me give just one example: in my dissertation research, I was doing non-linear estimation before there was applicable software. Partly because of my amateurish Fortran programming skills, I was using astronomical amounts of time on the IBM 360. Once my program ran all night because I failed to program in a stop feature when the iterative algorithm was wandering aimlessly around the plateau of a likelihood function. Repeatedly, I had to slink into the office of the department chair to ask for more computer time, and in his gruff voice that many of you will recall, John Dunlop would say, dammit, Russell, I told you last time that that was all the computer time you would get. I would go to Henk to give him the bad news; shortly thereafter my account would show additional computer time.

Perhaps the most important of Henk's attributes as a mentor and as a scholar—and one that I have tried to pass on to my students—is that of research integrity. With him, there was no cutting of corners. Everything had to be carefully done, thoroughly documented, and easily replicated. More than once, penetrating questions from Henk sent me back to the drawing board, a lesson well learned.

I could not close this without some comments about Henk's influence on my research career, which has been no less important. He instilled in me the importance, even as a theorist, of aiming at empirical application and empirical testing of theories. I've strayed

from that imperative on occasion, but always have returned to his view of the science and have tried to do empirical work as well.

My dissertation was basically an application of Henk's ideas and writings on the specification of theoretically plausible demand systems. Henk's work in the 1960s on additive logarithmic demand systems I think of as a precursor to the superceding 1970s research of Dale, Larry Lau, and Erwin Diewert on flexible functional forms. I wrote as follows in the first paragraph of the preface to my dissertation: "It has been said that the economics profession is endowed with a few great thinkers; the rest of us are plumbers. . . . I am certain that Professor Hendrik S. Houthakker . . . belongs to the more eminent group. He has been a seemingly perpetual flow of ideas, a few of which I have plumbed stubbornly over the past year; this dissertation is the result."

Henk was also a pioneer in the theories of duality and aggregation—across commodities and across agents. Early in his career, he wrote a brilliant paper on consistent aggregation across firms, and his research on duality, particularly oriented toward empirical application, was also influential. His work in this area, along with that of Terence Gorman, provided the inspiration for the better part of my early-career research.

On testing theories, particularly theories of consumer behavior, Henk was well ahead of the curve. Many of us are familiar with the non-parametric, revealed-preference tests developed in the 1970s by Sydney Afriat, Erwin Diewert, and Hal Varian. But it's little known that the first revealed preference test is found in an overlooked 1962 paper by Henk. Using binary purchasing power parities for European economies, he executed some 42 tests of the weak axiom of revealed preference, finding not a single violation and hence concluding, tongue in cheek, that Italians eat more pasta than the Dutch not because they have different preferences but because pasta is relatively cheaper in Italy.

Varian and others have gone on to test modifications of Houthakker's strong axiom of revealed preference. One problem is that these tests are computationally intensive in large data sets. A regrettably unfinished paper written by Henk in the late 1990s proposes a sufficiency test of the strong axiom using only weak axiom tests and some simple counting rules. He applies this test to an international data set and finds that the sufficiency condition is almost always satisfied, obviating the need for cumbersome tests of the strong axiom in most cases. I believe this paper, written long after Henk's retirement is brilliantly innovative. This paper deserves posthumous publication and Lester and I are currently working toward that end.

Finally, Henk also instilled in me the importance of economic policy and of public service. As you know, he always had a strong – and unapologetic -- interest in policy and served first as a staff member and later a member of the CEA. Partly because of his influence, I followed in Lester's shoes as a member of the professional staff of the CEA in 1965-66 and returned to government service during the Carter Administration.

Henk's influence on the profession has been profound and will persist for many years to come. His wisdom lives on in the careers of all the students who have been touched by

his consummate professionalism -- either directly as I was fortunate to have been, or indirectly as his own students have tried to pass along to their students what Henk represented.

He will be missed.