I entered the University of Chicago as a Freshman (first year undergraduate) in September 1937, intending to major in mathematics and physics. I received my Bachelors degree in mathematics in the spring of 1941. Upon graduation the economics department at the University of Chicago offered me a place in their graduate program and a fellowship.

One year later Professor Oscar Lange suggested that I would be interested in joining a research group in post-war planning that Professor Leontief was assembling at Harvard. I left Chicago for Cambridge in the

spring of 1942.

Soon after I joined his research group, Professor Leontief asked me what I intended to do when the summer was over. My answer was that I had intended to return to Chicago. Leontief asked about the particulars of the Chicago fellowship. When I told him, he said, "We can do better".

Some days later I received a letter from Harvard's Graduate School of Public Administration with a Fellowship application; the substance of the letter was that if I would complete the application I would be awarded a fellowship that was substantially more generous than that which I had at Chicago.

I phoned Lange at Chicago to ask him what I should do. He was not in Chicago. I was able to track him down to a U.S. Government establishment in, I believe, Virginia. I told him of Harvard's offer. He told me that he did not expect to be in Chicago the following year and suggested that I might benefit from a year at Harvard. Aside from a brief encounter when he was teaching in Columbia and I was stationed in New York while in the Army, this phone conversation was my last personal contact with Lange.

I did graduate work at Harvard for one semester. In early 1943, I was inducted into the United States Army.

I received my discharge from the Army in Berlin in January 1946 to become a civilian employee of the Office of Military Government for six

^{*} Contribution to a series of recollections and reflections on professional experiences of distinguished economists. This series opened with the September 1979 issue of this *Review*.

months. My assignment in Military Government was with the statistical reporting division of the Manpower Division – the equivalent of a Labor Department. The head of the division I was attached to was David Saposs, a well-known labor economist and labor educator. David Saposs was a product of the Wisconsin School that was an offshoot of the work of John R. Commons, the great institutional economist. The experience in Germany — and the interactions with Saposs — impressed upon me the importance of the specific institutions and historical circumstances upon what happens in the world. From that time on I think I understood that theoretical abstractions are necessary to focus thinking — but abstract theory is the beginning of serious economic analysis, not the end product.

The arrangement with Military Government allowed me to resume graduate studies in the United States in the fall. I had my choice of returning to either Chicago or Harvard. Because of personal reasons, because Lange, Viner and Simons were not going to be at Chicago, and because Douglas was sure to be in politics, I chose Harvard even though Chicago offered me a better financial deal. This explains my Chicago B.S. and my Harvard M.P.A. and Ph.D. However, the simple chronicle does not tell of the intellectual and political climate in which I became committed to economics.

Today, economics at the University of Chicago is associated with a special methodological, ideological, and doctrinal position. It was not true of economics at Chicago during the years I was there. The department had room for radicals like Lange, liberals like Douglas, middle of the roaders like Viner as well as the beginnings of a conservative group in Knight, Simons and Mints. Furthermore, even those who were most clearly the intellectual ancestors of the present Chicago School — Frank Knight and Henry Simons — were not, at least in the understanding of this young student, as rigid and ideological hard as today's "Chicago types". If we used Thatcherian language, the Chicago conservatives of the late 1930s would be "wets". Economics at Chicago in the late 1930s and early 1940s was open, rigorous and serious. Any department which ran the spectrum from Knight to Lange had to be intellectually open.

Under the leadership of its President, Robert Maynard Hutchins, the University of Chicago in 1937-1942, the five academic years I spent there, was a special place. The commitment to learning and discourse, especially in the humanities and the social disciplines, was honest. There was relatively little of the intellectual posturing that now characterizes

much of economics; subsidized research and consultancies were rare. Furthermore, although the main commitment by faculty and students was to their discipline or perspective discipline, the University's organization and curriculum supported cross discipline interactions.

This meant that friendships across fields of study were the normal result. While at Chicago I became close to the neurologist Jerome Lettvin and the mathematician Walter Pitts so that later on, when I was at Harvard after the War and they were at MIT, we shared living quarters along with Oliver Selfridge who works in artificial intelligence. In both my undergraduate and graduate days — in Chicago and at Harvard — I never really became strongly bound to my contemporaries studying economics.

Society — the world outside the University — hung heavy over my time at the University of Chicago. Because my entering the University of Chicago coincided with a family move from New York to Chicago, I came to the city in June of 1937. As the train from New York approached Chicago, it passed the Inland Steel Plant, where several days earlier a clash between striking workers and police — an event known in labor history as the Memorial Day Massacre — had taken place. When I left Chicago for Harvard, some five years later, World War II was in its third year and the war in the Pacific was not going well.

Domestic developments like the organizing of the C.I.O. (Congress of Industrial Organization) and the various trials and errors of the New Deal — and international developments — like Franco's triumph, Roosevelt's Good Neighbor Policy, the Moscow trials, the Stalin-Hitler pact and the war in Europe — were part of the environment. To this student, the University was intellectual discipline and stimulation, hard work, great talk and political involvement. The felt need to try to shape the world meant that student life often centered around political activity. As I tell my story, the importance of my political involvement in determining my decision to study economics will become evident.

My first year at Chicago — 1937-38 — I commuted from the west side. This took an hour and a half each way, each day on a combination of street car, elevated lines, and street car. Time on the street car and "El" was spent reading. Because of the courses I was taking, the reading was mainly in the social sciences: writing, mathematics and physics were not as easily done while commuting. As a result, I may have been the only student who did all the reading — required and supplementary — in the social science course. This paid off in the examinations when I "ran away" with a substantial cash prize.

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Economics was quite properly part of a social science sequence. As I think about introducing students to economics, the Chicago program, where economics was first introduced to the students as part of the study of society, where economic history, political science, sociology, anthropology and economics were part of an integrated sequence aimed at understanding modern society, is vastly superior to the usual practice of teaching economics in isolation in a specialized course. If I had my way the standard American course in economics would be eliminated and economics would be introduced in the context of social sciences and history. The current American way of teaching economics leads to American economists who are well trained but poorly educated.

Professor Frank Knight gave a series of lectures in this course, the substance of which are included on a set of readings on Social Economic Organization that he prepared. The idea of the market as a social mechanism for achieving cooperation was an incisive aspect of the lectures. Respect for and appreciation of the power of markets was instilled in this earliest exposure to economics. Other readings in economics in the course were Book III of Marshall, Simons' *Positive Program for Laissez-Faire*, some selections from Marx, a substantial amount of economic history and a rather minor bit from a standard text book. The serious readings, lectures from creative scholars and discussions in class led to more being accomplished in economics in part of a course than is usually accomplished in an entire year of principles of economics at other institutions.

During the years I was there, Chicago began to develop a "second" faculty that was devoted solely to the teaching first and second year students. As a result of both my performance as a student and my political activism, I became quite close to two such faculty members, Gerhard Meyer and Maynard Kreuger. Kreuger, in time became better known as a political person than as an economist (he was the Socialist Party candidate for Vice President one year). Meyer, who was a refugee from Germany, was always going to resume the research on business cycles that he had carried out in Germany but was never able to steal the time from his heavy teaching load. I was privileged to have Meyer as a friend. He was never too busy or harassed by the teaching loads to spend time talking and carefully explaining material. This friendship continued after I left Chicago; I remain indebted to Gerhard Meyer, a devoted economist.

Several years after World War II, when I was completing my graduate studies at Harvard, I learned that Kreuger and Meyer had tried to locate me in the spring of 1946 in order to offer me a position as a teacher in the social science sequence. I sometimes wonder what direction my career would have taken if they had located me and I had been in Chicago as a junior faculty member when the Cowles Commission flourished and Milton Friedman was inventing the Chicago Shool.

In the first weeks of the academic year 1938-39 my mother died. As a result, I moved to campus — my commuting stopped. In January of 1939 I moved to a newly established housing cooperative; Ellis Coop was diagonally across the street from the football stadium where Fermi and others were to set off the first self-sustained nuclear reaction. The Ellis Coop was the center of my personal and social life during the remainder of my time at Chicago. It was also a forum where interdisciplinary discourse took place; much of my education took place at Ellis. Of course, deep friendships were formed in this close knit environment.

As I mentioned earlier, I began my undergraduate studies intending to specialize in mathematics and physics. By early 1939 — perhaps in reaction to my mother's death — I knew I did not want to spend the rest of my life doing mathematics, although for the remainder of the academic year, I was "locked into" the mathematics-physics program. Much of my energies went into political activities.

In the winter of 1939, Oscar Lange, who was then a visiting faculty member at the University of Chicago, gave a series of talks, in downtown Chicago, for the Socialist Party of Chicago. The subject was the economic theory of socialism; the talks were an exposition of the content of the famous *Review of Economic Studies* papers which were later put into book form by the University of Minnesota Press. I went to the lectures. They were a model of clarity in the exposition both of how a market economy achieves "efficiency" and of decentralized market socialism as a means of achieving a close approximation to what markets were supposed to achieve but which under capitalism markets were not able to achieve. Socialism became a mechanism for making markets work.

The Lange short course made economics both interesting and important. One night after one of the lectures, Lange and I were on a windswept elevated train platform waiting for a train to take us to the south side of Chicago and the University. By then, Lange knew I was a student at the University. In our conversation, I expressed my dissatisfaction with my mathematics major. Lange suggested I look into economics as a major.

The same winter, Angelica Balabanof toured the United States in conjunction with the publication of her autobiography, *My Life as a Rebel*. The Socialist Club sponsored her appearance at the University. Paul Douglas, who greatly admired her not only chaired the meeting but contributed the magnificent sum of \$ 100 to her honorarium.

After the talk, Douglas hosted a reception in his apartment. The students who had worked on the meeting were invited. I was ill at ease in the unfamiliar social setting. Lange was there. He introduced me to a friend of his, a British visitor who seemed equally ill at ease. As a result, I spent most of the evening talking to Abba Lerner who had just come from Mexico, where he had apparently tried to convince Trotsky that Marxism needed to be revised in the light of the new insights due to Keynes. A friendship, in which I was never quite the student, began; a friendship that continued for forty years.

As a result of my involvement with the visit of Angelica Balabanof, Paul Douglas viewed me as a "clean" person on the left, one who was not "tainted" by Leninism or Stalinism. Over the remainder of my time in Chicago, as student politics and world politics took one turn and another, I was involved in a number of episodes initiated by Douglas, in which my role was to make sure that well meaning efforts were not subverted or captured by student communist groups.

Douglas' name in analytical economics is tied to the Cobb-Douglas production function, which is one of the foundation stones of simpler versions of neo-classical theory. However Douglas was not an ordinary neo-classical theorist. Although the Cobb-Douglas production function can be used as a foundation for a technologically determined theory of distribution, Douglas was much too acute a student of society to be persuaded by mathematical gadgets or to fully believe his econometric findings. In his various courses he often enthused about the Utopian visions of Robert Owen and he took bargaining theories of wage determination — such as the Webbs put forth — seriously.

Douglas later became a great liberal Senator from Illinois. In his tenure as Chairman of the Joint Economic Committee during Eisenhower's second term he laid the foundations for the economic initiatives of the Kennedy-Johnson years. The lessons I learned from Douglas are that any formal analytical tool — such as the Cobb-Douglas production function — explains but little of what happens in the world and that to be useful analytical tools have to be embedded in an understanding of the institutions, traditions and legalities of the market. Furthermore Douglas, by his passionate commitment to justice, served as an example

that the skepticism of an intellectual can be joined to the passion of a reformer.

During spring vacation in 1939, a group of five students from the University went south to Memphis, Tennessee to visit the headquarters and to go into the field with organizers from the Southern Tenant Farmers Union. This experience transcended the abstract student concerns with American racism and poverty. It was also a graphic lesson of how good intentions can lead to disasters, for a mass expulsion of share croppers — both white and black — was taking place in the rich lands along the Mississippi in response to incentives for landowners that were to be found in the cotton program of the Roosevelt Administration. The lesson was clear; policy may propose but the economy disposes.

In the spring of 1939 — as my second year at the University was drawing to a close — I had to declare my major. Following up on my conversation with Lange, I went to the economics department to sign up as an economics major. For reasons I never understood then and I still don't understand, Frank Knight was the department's major advisor.

I presented a transcript of my record and a prospective program of study to Professor Knight. My transcript gave Professor Knight some problems. I had not taken the correct courses to major in economics. Furthermore, my prospective program was too heavily into mathematics. After some questions, Knight concluded that I should not major in economics.

Professor Knight explained that because I was so close to completing the course requirements for the mathematics major (the tentative program for my third year actually completed the requirements), I should remain a mathematics major. In this way, I would have greater freedom to choose and I could avoid what Knight characterized as unnecessary courses that were required of economics undergraduates. He suggested that I should major in mathematics and minor in economics.

Off I went to the mathematics department. The advisor had been my teacher in calculus during my first year. He objected to an economics minor, for in his view economics led to no interesting mathematics! Furthermore, there was no precedent for such an arrangement; I would need to petition for special permission. A negotiation took place in which the mathematics people, who knew little or nothing about the substance of economics, selected a combination of statistics

and economics for my minor. The selection was inept — after several graduate level theoretical courses in the statistics department, I was scheduled into an economics department statistics course which took up how to plot points in diagrams for visual correlations.

The next three years at Chicago were extraordinarily stimulating. Knight had been correct. By majoring in mathematics and minoring in economics, I had an extraordinary amount of freedom in course selection. I was able to take courses with visitors such as Bertrand Russell, R.H. Tawney and M.R. Cohen.

Memorable courses in economics, aside from those by Lange and Douglas were by H. Gregg Lewis, Henry Simons and Jacob Viner. Gregg Lewis, who as I recall was a protegee of Douglas at this time, taught the course in Money.

I took several courses from Knight whom I found to be very funny. It was clear from his discussions of Hick's *Value and Capital* and Keynes' *General Theory* that he missed the main points. I recognized flashes of brilliance in his lectures but in my mind he didn't possess the clarity and understanding of Lange.

Many who were in Chicago were greatly influenced by Knight. Perhaps I was not sufficiently intellectually sophisticated or mature to fathom his depth, perhaps I wore blinders due to my political views, but I never found Knight either to be an inspiring teacher or a writer of serious impact. To my mind all Knight really had to say was contained in his lectures for the social science course, the writings on social economic organization and his great book *Risk*, *Uncertainty and Profit*. His reaction to Keynes' *General Theory* was summarized by the trite phrase — "What is not new is good and what is new is not good".

I quite quickly finished the undergraduate courses we had agreed upon as the content of the major and by my senior year, I was taking mainly graduate level courses in economics. I was also forced to avoid taking a language examination so I would not graduate and lose my scholarship.

In addition to Lange and Douglas, the most significant influences were Viner and Simons.

Viner was brilliant, incisive and formidable. Marshall's *Principles* was the main text in his first graduate course in theory. Students hold that Viner taught theory with methods derived from the Spanish Inquisition. Students were called in to recite and were often humiliated. His first graduate course provided serious training; much of the acuity that is associated with Chicago economics was, I believe, due to Viner.

In my view, his classic review of Keynes' *General Theory* laid out the basis for much of what later became the neo-classical synthesis. Viner has largely disappeared as a point of reference for Chicago economists.

Doing well in Viner's first graduate theory course was important for advancement in the Department. His grades quickly became public, at least to the faculty. The evening Viner's grades were submitted, before I knew what I had earned, Lewis took me into his study to "plan my future, to plot a career". I had done well; Lewis told me admission to the graduate department as well as graduate fellowship were virtually assured.

Over the next years, Simons became almost as large an influence on my thinking as Lange. He was a classical liberal with a strong individualistic-equalitarian bias. His prejudices were strong. In his view, the dominant social objective was the maintenance and extension of parliamentarian democracy. He was acutely aware that there was a contradiction between the economists' construct of competitive markets and the dynamics of entrepreneurial profit seeking, which naturally led to the seeking and development of market power. In Simons' view, the deviations from competition were serious, as much or more so because of their effect on the distribution of wealth and power than for their effect on the efficiency of allocation. He was concerned that the wealth distribution generated by unconstrained market capitalism was inconsistent with the maintenance of democracy. As the survival and extension of democracy was the main goal, intervention — a positive program was necessary to achieve both competitive markets and a tolerable distribution of income.

At the beginning of his classes Simons would read a paper — I recall the pages were tattered and had many penned passages — on his credo — his philosophical beliefs. The point of the exercise was that beliefs and ideology were incisive determinants of policy prescriptions and students had a right to know from where their professor's views were "coming". Simon's views on personal income taxation, radical control of monopoly and the dangers from trade union power were of a piece. Extremes of income distribution and *loci* of power that were independent of market constraints were anathema, because they threatened to undermine effective democracy.

One of the doctrines associated with Henry Simons and his contemporaries at Chicago is 100% money. In such a monetary system — which is truly a utopian vision in the light of what is now universally known about monetary institutions and how "new forms of money"

arise — the quantity of money only changes with a government surplus — which lowers the quantity of money — or a government deficit — which raises the quantity. In his *Positive Program* Simons advocated a government that is substantially larger than the government of Hoover's day. In his writings about taxation Simons advocated progressive personal income taxes that were based upon a comprehensive definition of income; this income tax was to raise sufficient funds so that budgets were balanced at target incomes.

This combination of policies gave Simons and the Chicago economists associated with 100% money an automatic contracyclical fiscal policy and a money supply process that tended to supply liquidity when investment fell short of the amount needed to achieve full employment. Before the implications of the *General Theory* for policy had been worked out — and without first revolutionizing theory — Simons and others had put forth a policy "regime" that was consistent with the *General Theory*.

In the *Positive Program* and in other writings Henry Simons raised questions about the good financial society — and whether limitations had to be put on the power to issue liabilities that have rarely been addressed to these days. Simons may have called himself a liberal, today conservatives claim him, but in truth he put forth proposals for a radical reconstruction of capitalism that could well serve as a basis for the reform of capitalism; even now Simons is deserving of consideration as a radical thinker.

During my later years at Chicago, a routine developed in which I migrated after libraries closed to a tavern on the corner of University Avenue and 55th Street. Henry Simons, who was a bachelor, was often at the tavern. He was quite moody and at times he clearly wanted to be alone; at other times, he would signal me to join him. It was clear to me that he was "troubled" about the inconsistency of his vision of a "good society" and his knowledge of the limitations of the possible. Although I was a radical and optimistic and he was becoming increasingly disillusioned and conservative, there was an agreement on objectives. We differed on what was deemed possible.

Oscar Lange was an ever present influence during my times as a student in economics at Chicago. Although I took my quota of courses from him — including a memorable course in business cycle theory where Keynes, Marx and the connections between their frameworks was analysed — the influence was mainly by way of out of class encounters. Soon after my encounter with Lewis after the Viner course I

recall Lange taking me aside and counselling me on how I should dress and deport myself around the Department. He used the phrase "Always compromise on conventions, but never compromise on ideology". I recalled this remark often, with some bitterness, as his political history unfolded.

We often discussed the war, I began from an orthodox anti-war position, but as the war in Europe developed it became untenable. Soon after the invasion of Norway, Lange remarking that "This was not a war for Socialism, but for the possibility of Socialism". That remark was influential and started me to move towards an acceptance of the war and the need for United States participation.

One year Lange had a research project in which Leonid Hurwicz, Bernard Zagorin and I were the assistants. The aim was to decompose the observed time series of economic data into its simple cyclical components. The project was not a success.

Lange was undoubtedly the major influence on my development during these years. I like to believe that the research program I have been carring out is consistent with the Lange of 1939-42.

Neither then nor now do I find what I learned from Simons and Lange to be incompatible. As I see it the socialism of Lange had more in common with the capitalism of Simons than with the socialism of Stalin, and the capitalism of Simons had more in common with the socialism of Lange than with the capitalism of Hitler. The important thing is not whether property is private and incomes are derived from owning property, what is important is for society to be democratic and humane.

Between 1937 and 1942, the University of Chicago was a fine place to begin to be an economist. The economists at the University covered a wide spectrum of thought; there was no dominant Chicago School. The emphasis upon intellectual rigor and seriousness was combined with a wide definition of the subject. Only Lange (and perhaps Douglas) of the senior faculty was sympathetic to Keynes, but perhaps this was due to the prior acceptance by the other members of the faculty of the need for a strong expansionary fiscal policy during the depression. Having reached this "Keynesian" policy conclusion by observing the economy, orthodox economists at Chicago felt no strong need to revolutionize economic theory.

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