Hugo F. Sonnenschein

1940-2021

BIOGRAPHICAL *Memoirs*

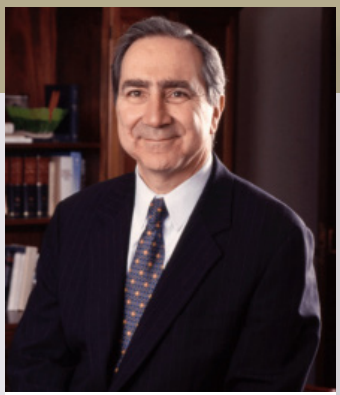
A Biographical Memoir by
Salvador Barberà
and Matthew O. Jackson

NATIONAL ACADEMY OF SCIENCES

HUGO FREUND **SONNENSCHEIN**

November 14, 1940 - July 15, 2021

Elected to the NAS, 1990



Photograph courtesy of the University of Chicago Photographic Archive.

Hugo Sonnenschein was an economist who won fame not only for his groundbreaking theories but also for his prowess and humanity as a professor, scholarly editor, and university administrator. He contributed to academic life in so many ways, from his research to his teaching, mentoring of students, editorship of a leading journal, performance as an administrator, and advisory roles on university and corporate boards. He had a deep devotion to truth and honesty, a care for people and their personal success and happiness, and a frankness in being demanding of others while believing that they could perform at the highest level.

By Salvador Barberà and Matthew O. Jackson

Sonnenschein earned a B.A. in mathematics in 1961 from the University of Rochester, an M.S. from Purdue University in 1962, and a Ph.D., also from Purdue, in 1964. His academic career began that year at the University of Minnesota, where he taught and researched in economics until 1970. He then moved on to the same roles at the University of Massachusetts at Amherst. In 1973 he took an appointment at Northwestern University, staying until 1976. His next stop was Princeton University, serving from 1976 to 1993, interrupted by his first administrative position, as dean of the School of Arts and Sciences at the University of Pennsylvania from 1988 to 1991. On his return to Princeton, he became provost of the university. Finally, he came to the University of Chicago in 1993 as president of the institution. After leaving that position in 2000, he continued at Chicago as the Adam Smith Distinguished Service Professor in Economics until his death in 2021.

Hugo Sonnenschein was born on November 14, 1940, in New York City. His mother died when he was very young, and he was raised by his aunt in Brooklyn, a period that he remembered fondly. He attended Oakwood Friends School in Poughkeepsie, New York. He later wrote,

I came to Oakwood as a "very little boy," age 11, and I left as a "little boy," age 16. Oakwood was responsible for much of my upbringing...The academics were very strong, my classmates were talented and smart, and it was "not bad" to learn that conscientious objection was a possible choice and that social values are a big deal...The remainder of my upbringing was, by and large, the responsibility of my Aunt Mary (ages one to nine) and my wife Beth, whom I met in my first year of college.

Hugo and his Aunt Mary.
(Courtesy Sonnenschein Family.)

Hugo got his bachelor's degree in mathematics from the University of Rochester in 1961. His attachment to Rochester would last throughout his life; he would receive an honorary doctorate from the school in 2017 and spent years on its board of trustees.

He took a circuitous route in his studies. As he put it:

> *Learning about your capacities, your talents, and your passions is hard. We understand the challenge—I probably better than most. I entered College at age 16 and made a hash of it. My grades were mediocre at best—several C's and on occasion worse. I slept during the day and played poker at night. I was given opportunities that I did not understand and chances that I had not earned...I was allowed to discover my own path and to do it in my own way. I will leave out the details of how it happened; let's simply say that I found my passion, my curiosities, and that there was a good deal of hard work and good fortune. Ten years later I had solved a big problem and this led to privilege and possibilities: a full Professorship in my mid-twenties, a career surrounded by the best and the brightest, and eventually the power to create for others the life that the opportunity to learn and discover had made possible for me.*

Hugo eventually encountered the writings of socioeconomic theorist and Nobel Laureate Kenneth Arrow on social choice, and as he put it "Bingo! I found a paper on 'social choice'." and the work of Kenneth Arrow. It was 'love at first sight.' He completed his Ph.D. at Purdue University in 1964 at the age of 23, writing his thesis under the super-

vision of Stanley Reiter. Hugo was part of a cohort of economic theorists recruited to, and nurtured at, Purdue, who would go on to be leaders in a golden age of economic theory that was just beginning.

Hugo and Beth on their wedding day. (Courtesy Sonnenschein Family.)

The University of Rochester was not only responsible for putting him on his academic course, but also for introducing him to his wife to be, Elizabeth "Beth" Gunn Sonnenschein, whom he met in 1957 as a freshman. She would go on to earn a Ph.D. in epidemiology and work at the University of Illinois and NYU. She has been an active member of different civic organizations in Chicago. Despite the many moves that accompanied Hugo's meteoric rise, Hugo and Beth raised three daughters, Leah, Amy, and Rachel. He proudly saw how their five grandchildren grew up. Hugo's love of family reflected the deep connections to other people and strong friendships that he would continue to form and maintain throughout his lifetime.

Hugo's first academic job after his graduation from Purdue was at the University of Minnesota. There he would begin work on his breakthrough papers on the theory of aggregate demand functions, which he would continue during a yearlong visit to Pennsylvania State University in 1968-'69, and complete after he moved to the University of Massachusetts at Amherst in 1970. UMass Amherst hired a cohort of star economists under promise of an effort to elevate the overall university's research stature (that never fully materialized). Among those who joined him were Richard Kihlstrom and John Roberts, who had been students at Minnesota and who would become lifelong friends of his.

Hugo stayed there for three years before moving to Northwestern University in 1973. There he was reunited with his advisor Stanley Reiter, who had arrived there a few years earlier and was again instrumental in building the economic-theory community into one of the world's best. Hugo next landed at Princeton University in 1976, where he would settle in for a dozen years. His Princeton years were marked by two special features. One was his work as editor of Econometrica, one of the flagship journals in economics, and the other was the full flourishing of his ability to inspire graduate students to produce individual

Hugo and family together on holiday.
(Courtesy Sonnenschein Family.)

work of the highest stature, while also instilling a spirit of collective joy in conducting research.

Hugo was again ready for a new challenge, and he became the Dean of Arts and Sciences at the University of Pennsylvania in 1988. His many moves reflect Hugo's interest for belonging to and improving ambitious departments and universities. These aspirations led him to his second distinguished career as a university administrator.

After Hugo's appointment as dean at Penn, he made an impressive ascension up the administrative ladder. Three years later, in 1991, he was hired back to Princeton as provost. He would stay there for two years before being appointed president of the University of Chicago in 1993, a position he held until he resigned in 2000. He then continued as a Chicago faculty member and eventually became emeritus. He was still writing research papers until his death on July 15, 2021. His last paper was under review for publication at the time.

Although Hugo's desire to switch from research to administration duties may have initially been a surprise to many of his friends and colleagues, it soon became clear that his special qualifications for both kinds of jobs had the same root: the ability to see what others did not, to ask the right questions, and to exert maximal effort to solve problems that others had overlooked.

Consumer Behavior and General Equilibrium Theory

Hugo's first major contribution in economics came from asking a question to which people had already, and incorrectly, taken the answer for granted. Economists generally assumed that market (excess) demand functions would be nicely behaved, since individual people have demand functions that satisfy a number of natural properties. Not only did Hugo show that none of these properties extended to market demand functions, but he proved that essentially any function could be an excess demand function. In a pair

of papers published in 1972 and 1973, he showed this for (excess) demand functions of just one good as well as for any finite number of goods. This result became known as the Sonnenschein-Mantel-Debreu Theorem, as it was later extended by Rolf Mantel and Gérard Debreu, removing some of the technical conditions and approximations that Hugo had used to prove the first versions of the theorems. This lack of restrictions on excess demand functions came as a huge surprise to economists, who had been working with demand functions for decades, and it rightfully caused quite a stir.

To quote James Heckman,

> *To an empirical economist interested in using demand theory to interpret data, the body of work initiated by Hugo was enormously revealing....The Sonnenschein theorem came at a time when economics was being enriched by microdata and it was a rallying point for a paradigm shift in empirical econometrics that abandoned the representative agent paradigm.*

Another of Hugo's most influential papers, co-written with one of his students, Faruk Gul, and a long-time friend, Bob Wilson, confirmed what was known as the "Coase Conjecture." Again, it had a conclusion that ran counter to much economics orthodoxy. The idea is that a monopolist can be its own competitor. After having sold to people who attributed the highest value for a durable good, the monopolist then has an incentive to drop the price to sell to others who would still buy the good, but at a lower price. Anticipating this, those with the highest valuations can benefit from waiting. The technical details of how the timing works (for example, how quickly the monopolist can drop the price) and how one models strategies turn out to be critical, and were one of the contributions of the Gul-Sonnenschein-Wilson paper and theorem.

Although we do often see a world with well-behaved demand functions and monopolists who manage to extract substantial profits, Hugo's results forced economists to think carefully about when and why this should be so and to be more rigorous in building their foundations and their claims about how an economy functions.

Hugo's relentless questioning of the foundations of economics led him to other important contributions. He was a key contributor, for example, to the study of foundations of consumer and producer theory that were made at the University of Minnesota in the late 1960s and that culminated in a 1971 volume edited by John Chipman, Leo Hurwicz, Marcel Richter, and Hugo. He continued research on consumer behavior

over the years, with later papers with Richard Khilstrom and Andreu Mas-Collel that characterized the implications of the weak axiom of revealed preference, as well as a paper with Vijay Krishna fully characterizing consumer behavior in a classical setting. Hugo, together with Andy McLennan, analyzed whether Walrasian equilibria had a solid normative basis and could be rationalized via a carefully analyzed game. He and Bill Novshek provided new insights into Cournot equilibria in settings in which information about demand can be acquired and released. His work with John Roberts showed that when extending the classic competitive setting to monopolistic competition, basic issues of nonexistence arise. And with Wayne Shafer he showed how the existence of general equilibria extends to a world in which consumers do not have well-behaved preferences.

Social Choice, Mechanism Design, and Incentives

As mentioned above, Hugo explained that his decision to become an economist was strongly influenced by his discovery, as an undergraduate, of Arrow's "Social Choice and Individual Values," the modern foundational basis of social choice theory. Closely related, but not restricted, to the study of voting methods, social choice addresses the normative issues that arise when regarding the aggregation of individual opinions to make collective decisions. If only two alternatives are at stake, then some form of weighted voting, such as majority rule, is the obvious method. However, when more than two alternatives are available, Arrow's celebrated impossibility theorem proved that no attractive (non-dictatorial) method could generate collective orderings over alternatives that satisfy a basic level of rationality attributed to individual preferences, while having its ordering of any two alternatives depend only on people's preferences over those alternatives. A question of rationality had already been part of Hugo's spectacular doctoral dissertation, a short piece in which he discussed the different forms of preferences that could be described with the language of binary relations and the implications of different forms of choice consistency resulting from each one of them. Moreover, the work that had made him famous at a young age was already on the topic of aggregators, focusing on whether aggregating individual demands would generate a comparable excess market demand function.

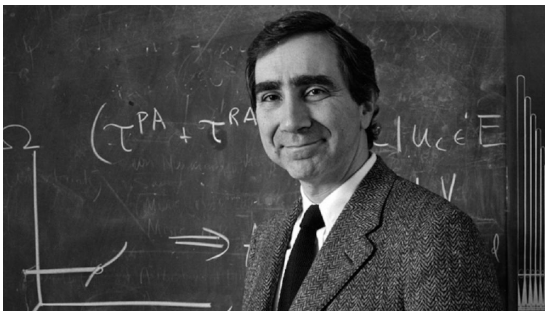
Given Hugo's tendency to question the commonly accepted wisdom, it is not surprising that several of his papers in the field of social choice were devoted to asking whether Arrow's results were robust to changes in the criteria of what comprises a "rational social decision." Indeed, he showed that the results were robust in important directions. A joint article with Andreu Mas-Colell studied the case where collective decisions were only

required to be well defined, and not necessarily transitive. Work with one of us, (S.B.), further refined by Andrew McLennan, analyzed the aggregation of individual preferences into randomized decision rules.

Both papers provided characterizations of methods that would satisfy appropriate adaptations of Arrow's requirements to those enlarged frameworks and provided evidence that, although some new and non-dictatorial voting procedures could arise formally avoiding Arrow's impossibility conclusion, these additional methods still required a very rigid distribution of decision power among the members of society. Probing the strength of another major negative result in social choice was also part of Hugo's contribution to the field. The pervasiveness of strategic behavior on the part of economic agents in general, and that of voters in particular, was well registered in the minds of scholars. It had been hindered, however, in many theoretical developments, partly at least because of the lack of an analytical tool, until the development of game theory allowed for a lucid analysis of incentives. Hugo was in the forefront among those who understood the importance of developing models that emphasized the role of strategic behavior in economics at large. He worked, for example, on the foundations of rational-expectations equilibrium with Bob Anderson. Most notably, he played an important role in the incorporation of incentive issues into social choice theory. Alan Gibbard and Mark Satterthwaite independently proved that it was impossible to design non-trivial voting mechanisms under which agents would reveal their true preferences rather than resorting to other strategies—for instance, the common one of supporting their second- or third-best candidates rather than "wasting" their vote on a more preferred candidate with less of a chance. Hugo immediately realized the importance of this result as a starting point for many relevant further developments and decisively fueled its diffusion. He coined the term Gibbard-Satterthwaite Theorem following his instinct to attribute credit fairly. He and David Schmeidler developed two simple proofs of the result, which each provided different insights. He toured the country presenting the theorem, emphasizing its importance and promise, and very much contributing to the diffusion of what he considered a great result, not minding that it was initially due to others. His generosity when it came to spreading the news about good work also extended to many other cases.

Two of his early contributions to the study of incentives went in opposite directions. In joint work with Satterthwaite, they essentially extended the negative result from the simple model of voting for discrete alternatives to the more complex one of economic environments, where the space of allocations is modelled as a continuum and preferences are allowed to exhibit indifferences among many allocations. In a more positive note, his

paper with S.B. and Zhou characterized all methods to elect new members of a society through the vote of those already existing ones that are strategy-proof under preference-separability conditions.



Hugo in the classroom. (Courtesy University of Chicago Photographic Archive.)

Decades later Hugo would return to revisit some of these foundational questions in cases where not just one, but several decisions are to be made. In work with one of us (M.O.J.), Hugo showed that if there are many alternatives over which people must make decisions, then efficient and highly democratic systems exist. These systems give budgets to voters, which effectively force them to trade off their influence across different dimensions: if they want to have a high influence on one dimension, then they cede some of that on some other dimensions. Thus, situations in which voters make multiple decisions at once, allow for compromises and fair and efficient properties that are precluded in the one-dimensional setting. In Hugo's last paper, together with Omar Al-Ubaydli, M. O. J., Christis Tombazos, and Yiqing Xing, he showed—via theory and laboratory experiments—that even in the absence of a central voting system, people negotiating over decisions with multiple dimensions can reach efficient outcomes even in the case of opposing preferences and private information about those preferences.

An Outspoken Editor

In many ways, Hugo's tenure as editor of *Econometrica* was transformational, not only for that publication, but for other economics journals. He saw his role not only as a manager and processor of papers, but also in directing the type of research that was published and the areas that the journal covered, as well as the ways in which the whole journal operated.

His editorship marked the beginning of a new tendency for the journal to achieve a better balance of topics and to require a high level of advancement from technical treatments. In these emphases Hugo was guided by a concern to provide a wide readership with the best and most innovative work, regardless of topic or technique, as far as it addressed essential advances in knowledge. And he did so with extreme generosity, pushing for fields, subjects, and techniques that were far from his own research work, even sometimes beating hard on those that, while closer to his field, might not be meeting his high stan-

dards. Much of the evolution of the journal since then can be traced to his hopes and to the changes he introduced forty years ago.

In a 1983 editorial, celebrating the previous 50 years of the journal, Hugo expressed his hopes for its future:

> *The success of the Econometric Society and its journal Econometrica is mostly due to the foresight of our founders, who identified an idea whose time had come....These values call for theory that is both precise and realistic. They recognize the fact that such theory is complex and that it demands the use of mathematics. At the same time, these values emphasize the interplay between factual studies and theory. No amount of data can by itself explain economic phenomena; on the other hand, economic theory and methods of statistical analysis must take their inspiration from observation. The success of Econometrica depends most upon the breadth and freshness of the papers that we publish. Refinement and generalization is an essential aspect of the scientific process, but the econometric method shines most brightly when it changes the way in which we conceptualize economic processes or explain important economic phenomena.*

Hugo's broad view of the profession's highest aspirations led him to define the role of the journal in the most demanding terms. "*Econometrica* eagerly solicits papers from all along the frontier. No paper will be rejected because it is 'too mathematical' or 'too numerical,' but for a journal such as ours to remain viable, papers must be written so that the non-specialist is informed of what they are about and receives guidance as to why the results are important." In fact, and despite the fact that social choice theory was a major interest of his, Hugo wrote that "One area in which the number of submissions is extraordinarily large is social choice and voting theory....I am asking referees to impose especially high standards in judging these papers." He was not afraid to voice that concern and act upon it, and he would continue to accept papers and to write further ones of his own in the area, but on problems that in his perception moved the literature to fruitful directions. Here was Hugo's honesty.

As another example, to the extent that he was to raise standards, he also wanted to help potential contributors. Hence, he wrote a "Manual for *Econometrica* Authors" and published it as a full-length article, along with Dorothy Hodges, the journal's managing editor. There, the punctilious advisor and the careful writer also shine amid what is

usually a dry set of instructions. The manual went from general statements about quality requirements to very precise recommendations about how to write well. Those of us who were trained under Hugo's guidance know well what he expected, and what he meant when recommending re-writing:

> *For publication in Econometrica, manuscripts should meet the highest scientific standards. This means they should be novel, important, and correct; in addition, they should be well presented....Write crisply but clearly; the editors will provide the space for you to explain the results in an attractive manner. Authors of papers concerned with high abstract theoretical analysis should keep in mind that our membership includes economists whose own work is rather applied. Similarly, authors of applied papers should make their results accessible to members who have little acquaintance with the institutions being considered. Expository writing for professional journals is an exciting business. It consists of two separate tasks: (i) the elimination of bad writing, by assuring that the article is grammatically correct and conveys precisely the thoughts to be expressed, and (ii) the cultivation of good writing, by reworking the manuscript again and again, sentence by sentence, until the ideas are put forward with the maximum amount of clarity.*

Hugo stepped down as the editor in 1984. His farewell statement summarizes his ambitions and accomplishments:

> *The greatest pleasure for an editor is to be involved in the handling of submissions that he regards to be of fundamental importance. These are papers that may significantly change the way that people think about economic processes. On many occasions I felt that I was dealing with such contributions. This is what has made serving as Editor of Econometrica most worthwhile.*

Teaching and Mentoring

Hugo was particularly famous among economists for his abilities as an advisor. Part of his inspiration came from one of his own mentors from his studies at Purdue, Stanley Reiter, whose "light touch" Hugo admired. Hugo mixed it with his own style: helping people learn to find their way by asking many questions and ultimately teaching them to ask those questions of themselves, while providing support and infectious confidence. It is not

surprising that Hugo excelled at this. It combined his greatest strengths: a deep connection to other people, an ability to ask the right questions, a forthrightness and honesty that allowed him to be critical and yet supportive, and the courage to steer research in directions that he felt were most fruitful, regardless of whether he was working in those areas. He was famous for long walks with students (with an occasional stop at his favorite ice cream place), asking endless questions and often using a Socratic approach. The importance of those many questions is emphasized in a quotation from S. B.:

> *Then, one day, I bumped into him at the entrance of the Math Center. He simply said: Do you know whether the Gibbard-Satterthwaite theorem extends to correspondences? Why don't you take a look?" That was the first and most decisive time, but certainly not the only one, when Hugo led me on a path that was to keep me busy for years, just starting from a simple question. How many people can do that? How many can be so insightful and so generous in sharing ideas?*

Hugo seemed to juggle effortlessly the many demands on his time, while finding time to nurture his students. As Dilip Abreu puts it,

> *Although he was phenomenally busy with the editorship of Econometrica and the considerable demands placed on a star at the epicenter of the economic theory universe, he found the time to participate in informal evening seminars on some of the most current and intriguing new developments, to be a highly charismatic and brilliant teacher, and to mentor legions of students. He was incredibly open and receptive to bumbling new ideas which he would patiently listen to and probe over the course of long and memorable walks. He made it seem natural to think that anything was possible (his own example made it seem so plausible).*

Moreover, Hugo was by no means exclusive in his interactions, his students also taught each other, collaborating, and becoming lifelong friends. As Vijay Krishna said,

> *"Who taught you game theory?" was a question Hugo's students from the early 1980s were often asked...After some reflection, I came to realize that the correct answer to the question "Who taught you game theory?" was complicated. .... At one point, a group of us decided to meet late on Wednesday evenings to discuss various papers on game theory, especially*

> *the then new work on refinements of Nash equilibrium. When he heard about this, Hugo enthusiastically became a member of the weekly group, learning along with us. So perhaps the correct answer to the question was that we learned game theory together with Hugo rather than from Hugo.*

This collaborative spirit is reflected in a statement by George Mailath: "There are so many papers from that period without Hugo's name on them but where his hand can be clearly seen."

And, Hugo was approachable. As Arunava Sen states,

> *I was both astounded and petrified when I received word that Hugo wanted me to call him (collect). I had no idea that famous professors spoke to prospective graduate students. In fact, I was sure that I would be asked some tricky technical questions and had half a mind to keep my notes and textbooks within easy reach when I called....Hugo could have let the office send me a letter but it was typical of him to take the time out to make a personal connection.*

The general sense of community that Hugo built with his students and colleagues led many of them to follow Hugo on his various journeys. Beyond those he convinced to join him on his foray to UMass Amherst in the early 1970s, a later invitation to visit the Graduate School of Business at Stanford University in 1984-85 would attract a caravan of his current and former advisees for long and short visits: We two authors of this piece, plus In-Koo Cho, James Dow, Faruk Gul, George Mailath, and Arunava Sen.

Gathering with former students, circa 1985.
(Courtesy Sonnenschein Family.)

Along the way, Hugo made key introductions whenever he saw the potential for synergies: In-Koo Cho to David Kreps, Faruk Gul to Bob Wilson and S. B., and M.O.B., and Lin Zhou to S. B.

Hugo's mentorship and advice, blended with support and friendship, also extended well beyond his students. For example, Hugo was a key mentor to Steven Poskanzer, who worked closely with him during his stints as dean at Penn and provost at Princeton and became Hugo's chief of staff when he was president at Chicago. Poskanzer, who would go on to become president at SUNY New Paltz and Carleton College, recalls, "He was the finest and most caring of mentors, who changed my life for the better, and was a pillar of joy and friendship for me and my family…It's not every UChicago president, you know, who will personally deliver Medici pizza to your house."

Administration

Hugo's ideals for universities ran parallel to his visions for research: he concentrated on the core purposes, asked whether those purposes were being properly served, and then exerted great efforts in improving the situation. Let us begin with Hugo's general views about the role of any university that deserves the name, as expressed in two speeches, twenty years apart. Shortly after his appointment as president of the University of Chicago, he accepted one of the honorary doctorates he received, this time at Barcelona's Universitat Autonoma. In his speech there, he started by stating his belief that the essential purposes of universities were much more limited than conceived of by many people, that such purposes were of vital importance, and that universities should be held in the highest standards in terms of how well they accomplished them. In Hugo's words,

> *Universities should be places where we can think hard and independently about the ideas that are the most important and which are most likely to change the way in which we view our history, our humanity and our opportunities for the future. They should be places full of men and women committed to finding the truth, to developing better explanations and deeper understanding: people who believe that thought and discovery will serve, more often than not, to improve the human condition. Universities should also be places of intellectual dissent. This is particularly important because new thinking is inevitably dissent from the orthodox. They should be places where faculty share with students the life of the minds–its joys, its hard work, its discipline and building of character–so that a piece of the scholarly attitude remains with these students for a lifetime.*

Some twenty years later, Hugo addressed incoming Chicago students with a passionate defense of this role.

> *Our mission is to shed light, and this extends to the most basic questions: how did the universe begin, how did life begin, how does life pass from generation to generation, what are the forces that govern the material world, what of laws, and the role of collective action, what are the finest expressions of our humanity and how can we create more of these, how should we consider our responsibilities to one another?*

And then he asserted that to advance their education for life, universities had to enhance the values that lie at the core of their purpose, because the deepest discoveries—not routine results, but the stuff that changes the way we view the world and understand the nature of our very being—are produced by individuals with certain habits of mind.

He went on to state that these were the values he had wanted to support and to reinforce and to transmit to new generations.

> *We are about ideas that change the way that people think. We are about discovery. We are about investigation. We are about the urge to know, the demands of critical thinking and the relationships among ideas. But you will find that your education here will serve you well in the marketplace too. This does not mean that it is our goal to provide you with an education that will lead to maximal income. It is not, nor do I believe that such a result is what you expect or consider most worthwhile. It would be foolish to ignore the economic consequences of your education, including the substantial cost of providing it. However, it is clear that any thoughtful consideration regarding the costs and benefits of education must take into account the fact that education has benefits for an individual and for society that go beyond the generation of income. You will leave here better thinkers, better informed, and better able to understand and participate in the world…At the frontiers of learning and discovery there is no coach to lead you to the right questions or to put you on the right track. I have described how we try to get you started. But our goal is to help you to become your own guide…to fan the flames of the "urge to know." The discipline to know what you know and know what you do not know is most essential. Again, it is a test of character. It is supported by "habits of mind."*

Hugo's presidency reflected his general values through the pursuit of clear and explicit objectives. They were the result of his inquisitive mind that led him to question the path

of his own university, the challenges facing it, to seek the advice of others, form a plan, and then defend his conclusions, however controversial they might be. When Hugo looked carefully, he found that the University of Chicago could not sustain its current trajectory financially. The university had a small student body, small endowment, a budget that was largely driven by tuition, and yet a very intense education with a large research faculty. He needed to grow the financial base both through a larger student body and intense fundraising, and at the same time not dilute but actually enrich the undergraduate experience.

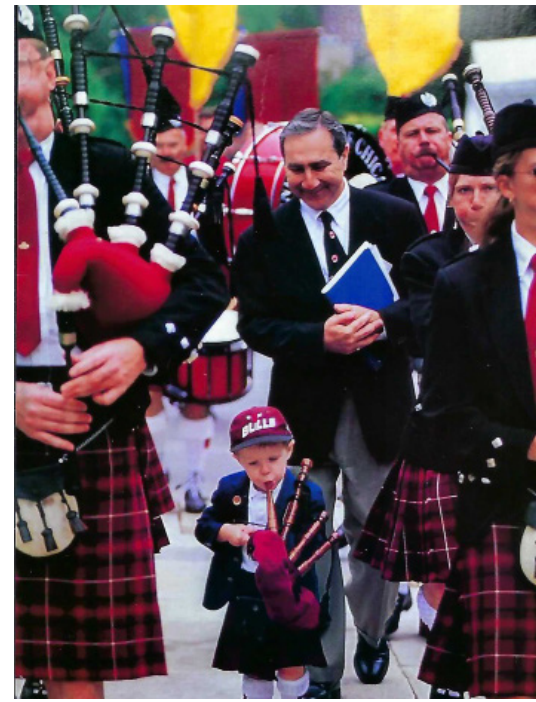
In April 30, 1996, he addressed an open letter to the faculty stating his conclusions about needed reforms.

> *Dear Faculty Colleagues: No scholar comes to the University of Chicago without an awareness of its brilliant past. I write to you today to describe a course of action that I believe can lead to an equally brilliant future.... the task before us is to sustain and enhance the quality of our university in the long run. Beyond insistence upon excellence and adherence to our distinctive values, a critical ingredient in achieving this goal will be our ability to generate necessary resources ....I am recommending a course of action that I believe will significantly strengthen the basis or long-term support of education and scholarship at the University. At the center of my recommendation is a heightened priority to collegiate education both inside and outside the classroom....Rather than proceeding directly to a discussion of how to implement this course of action, I would have us consider whether this path is consistent with the values and history of the University, and whether it will contribute to the betterment of society.*

As John Boyer wrote in a book about the history of the University of Chicago, Hugo stressed that the university's fierce commitment to ideas and intellectual community would be difficult to sustain in the future without generating new revenues for investments in research facilities, libraries, classrooms, salaries and financial aid. He also stressed that tuition was not covering salaries, and endowment did not grow at a robust rate. He recommended giving heightened priority to collegiate education both inside and outside the classroom, changing the university's disposition toward undergraduates, and seek an expansion of the College from the 3,550 students then allowed to a future size of 4,500, not only to increase revenue but also to improve the quality of liberal education. This general direction of change was to be implemented through a list of tasks that were

based on the recommendations of different task forces and committees: reviewing the undergraduate programs and the Core, investing in new classrooms and laboratories, but also in dorms and facilities to improve the quality of students' experience outside the classroom, and drawing a comprehensive master plan.

Not everyone agreed, and some prominent voices were raised against his proposals. Polemics ensued. Hugo did not back down in the face of fierce resistance because he was convinced that his changes were essential for the University of Chicago not only to be able to continue on its path, but to thrive. Eventually his plans went ahead, even after he stepped down as president in 2000. And now, more than twenty years later, his decisive contribution has been fully vindicated as the basis of a stronger, more lively and ready-to-face-the-future institution than the one he found, still fully respectful to the principles that both his university and he cherished.



Hugo at his inauguration parade, 1993.(Courtesy University of Chicago Photographic Archive.)

Boyer states that "It is no exaggeration to call Sonnenschein's letter from April 1996 a decisive turn in the recent history of the University, for it has contributed powerfully to the opportunities and resources that we welcome as established features of the institution today." After quoting the 2001 opinion of Nobel Laureate Professor David Kirp (UC Berkeley), stating that only the passage of time could determine who had been on the right side of history, Boyer concludes that with the distance of twenty-five years it has become clear that it was Hugo. To quote James Heckman, "While many traditionalists opposed the move, Hugo persisted, and the move was clearly the right one. It has strengthened the University of Chicago for the coming generations."

Original researcher, inspirational teacher and mentor, trend setter for the future development of economics, demanding editor, visionary university reformer—Hugo's

relentless questioning, along with a love and respect for others, made him a leader on many fronts, as well as an extraordinary human being.

Honors

Hugo was a member of the National Academy of Sciences and the American Philosophical Society, Fellow of the American Academy of Arts and Sciences, Distinguished Fellow of the American Economic Association 2006, and president of the Econometric Society. He was awarded honorary doctoral degrees from Tel Aviv University in 1993, Universitat Autonoma de Barcelona in 1994, Lake Forest College in 1995, Purdue in 1996, North Central College-Naperville in 2001, Chicago in 2002, Keio University in 2015, Rochester in 2017, and Universidad Nacional del Sur in 2019. He was a member of the Board of Trustees of Rochester, chairman of the board of governors of Argonne National Laboratory, chair of the scientific council of the Barcelona School of Economics, and a member of numerous other boards.

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