

## Economics and Psychology

Lionel W. McKenzie and  
Richard H. Thaler  
from Personal Perspectives

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I

### Lionel W. McKenzie on General Equilibrium Theory

#### 1-1. The University of Rochester in My Fond Memory

This paper aims to carefully discuss the distinguishing features of the University of Rochester, with special focus on the Department of Economics which has produced the two opposing streams of economic science: namely, classical general equilibrium theory represented by the older and world famous professor Lionel W. McKenzie, and recently rising behavioral economics promoted by the younger and Nobel prize winner Richard H. Thaler. I myself was once a faithful student of McKenzie, being fortunately granted a Ph.D. from him. At Rochester, I was a bit older than Thaler, yet had a very good friendship with him throughout my stay there for four years. While McKenzie was a very authoritative teacher respected by all faculty members, Thaler was a very lively person loved by all fellow students. The question which might arise here is why and how these two persons of opposing personalities have been produced at the same place, namely Rochester. Perhaps, this is a kind of question which deserves a lot, and will gradually be answered in this paper.

This paper is largely concerned with the relationship between the two fields of academic fields, economics and psychology, with special reference to Richard H. Thaler and his pet field of behavioral economics. Since both Thaler and I were once graduate students and good acquaintances at the University of Rochester, in Upstate New York, the major part of the paper should be destined to be written on the

1) The Eastman School of Music is a very famous music school belonging to the University of Rochester. It was established in 1921 by celebrated industrialist and philanthropist George Eastman. Every year, famous conductors, pianists and violists are invited on the stage of school theater.

basis of my own personal histories and experiences together with our common teachers and friends there.

The University of Rochester is very famous as a middle-sized private research university, strongly featuring strong science orientation blended with unique music education<sup>1)</sup> According to the record of university history, it can trace its origins to The First Baptist Church of Hamilton, New York, which was founded more than 200 years ago, exactly as early as 1796. The University of Rochester's new chapter was formally awarded by the Regents of the State of New York on January 31, 1850, meaning that the University of Rochester was already established before the Meiji Restoration featuring the beginning of Modern Japan. The first female students were admitted to the university in 1900. Since then, it moved into its current big and beautiful campus along the Genesee River in 1955. As of Fall 2023, there were around 6,800 undergraduates studying basic subjects, around 5,400 postgraduates doing fundamental research, and around 1,300 academic staffs doing more advanced research at the university. The University of Rochester is located at the north of New York State, being bordered over Lake Ontario on the north by Canada. I was once drove a car to the southern shore of the lake, and picked up a pretty round stone, and have kept it for my good memory until today. The City of Rochester was, and still is, a middle-sized border town, being famous of lilac blooming and film manufacturing.<sup>2)</sup>

Rochester is bordered on the north by Canada. So, we cannot say that the weather at Rochester is very comfortable throughout a year: it is generally cool and sometimes very cold. In particular, we have to endure the long

stormy winter beginning with mid-November reaching through the next year April, in which people have to wear heavy overshoes and extra-big hat covering mouth and ears. When I was at Rochester, such a hat was so big and somehow looked military, it acquired a very interesting nickname a "special combat cap" among my fellow graduate students, with special reference to Japan's *Kamikaze Tokko* (or God Wind Special Attack) at the end of the Pacific War. Even now, whenever I hold it down from an old closet, the time-honored cap can remind me of my young and ambitious student days at the University of Rochester in the Lilac City of Upstate New York. I still remember that in a very cold and snowy days, I once began to attempt to walk through what I named setsugen or a broad expanse of snow widely spreading in front of the graduate living center where I stayed for three years. Needless to say, my reckless attempt completely failed, with the result that I developed a high fever and had to stay in bed for a couple of days after safe return to my residence.

In the above, I have introduced an overall picture of Rochester to the general reader. In what follows, I am in a position to more specifically discuss the characteristics of the University of Rochester, especially the Department of Economics per se. In the next section, I will turn to the life and work of Lionel W. McKenzie as "Professor Fixed Point." Then, the following session will focus on Richard H. Thaler as "Mr. Going My Way". Third section will turn to the profoundly interesting question of why Rochester has succeeded in producing these two outstanding scholars of opposing personalities and accomplishments. Clearly, this should be a good problem of "uniformity

2) In spring, all people in Rochester enjoy seeing a great variety of lily blossoms, so that the city of Rochester is nicknamed the Lilac City.. Rochester is also famous as an industrial city in which the Kodak and Zerox companies are located. My teacher Lionel W. McKenzie worked for the University of Rochester as the distinguished Wilson Professor of Economics, with Wilson being the first presi-

dent of Kodak Company. Another teacher Ronald W. Jones was then the Zerox Professor of International Economics.

versus diversity”. And several unsettled issues will be mentioned in the final section.

## 1-2. Lionel W. McKenzie as a Late Bloomer

As soon as I as a young and ambitious man arrived at the International Rochester Airport in the 1960s, some strange and indescribable “air and smell” jumped into my nose. Generally speaking, when we landed an unfamiliar land, the first impression was so important and unforgettable. Unfortunately, my first impression of Rochester was not so good, just feeling that after a long flight, I came to a completely dull countryside in the 1960s without any excitement and dynamism. When I reached the final destination, namely the campus of the University of Rochester, however, my dull image of Rochester had to change completely. The beautiful big campus along the Genesee River consisted of the old and traditional church and many other British-style classical buildings whose walls were covered all over with ivy. In front of the big library with huge entrance doors, there was a round stone monument on which the following famous formula of Albert Einstein formula was put into print: “ $E = MC^2$ ”, meaning that Energy is equal to Matter multiplied by Light Speed Squared. When this formula came to my notice, it immediately led me temptation for the following convenient interpretation. “Physically, your body may be small and weak. If you keep going to the very end, however, you will mentally be able to acquire a huge energy toward a Ph.D.”

As I mentioned above, in the 1960s. Japanese universities were so noisy and turbulent that they became no longer good places for study and research. Very fortunately, I was ad-

mitted with fellowship to the Graduate School of Economics, the University of Rochester, in which Lionel W. McKenzie (1919-2010), as one of pioneers together with Kenneth J. Arrow (1921-2017) and Gerald Debreu (1921-2004), was dominant in the field of general equilibrium theory. Modern value theory was then a compulsory subject for all students, with the English translation of Walras’s book *Éléments d’économie politique pure* being used as a main textbook. At Rochester, this classical book was highly recommended first by Lionel W. McKenzie, and later by Ronald W. Jones and many other colleagues, as the best introduction to advanced courses such as general equilibrium and international economic theories. In hindsight, it seemed that our master teacher McKenzie more or less agreed with Joseph Schumpeter’s dogmatic evaluation that only pure economics represented the main body of great Walrasian system, and other things related to social and applied economics should completely be ignored as useless fragmentary appendices.<sup>3)</sup>

Let me carefully make mention of the life and work of my mentor, Lionel W. McKenzie. His career was very unique and worth of detailed investigation. He seemed to be a typical late bloomer, so that he was very kind and generous to aged students from foreign countries such as Japan, Greek, India, and Brazil. According to his personal history, he was born in a countryside named Montezuma, Georgia in 1919. Shortly after he finished undergraduate studies at Duke University in 1939, he crossed the Atlantic Ocean towards Oxford University, the United Kingdom, to continue his graduate studies. His thesis advisor was John R. Hicks, who was already very famous as the author of

3) Quite recently, Kayoko Misaki (2024) bravely raised a strong objection to the popular yet dogmatic interpretation of Schumpeter about Walras’s achievement.

4) McKenzie was a very honest and frank person to describe his academic progress as a scholar throughout his long career. For details, see McKenzie (1999).

the monumental work *Value and Capital* (the first edition, 1939; the second revised edition, 1949).<sup>4)</sup>

In hindsight, McKenzie was so frank to say that he had a very hard time at Oxford, with the very unfortunate result that he could not finish his doctoral dissertation there. Besides, his study at Oxford was seriously interrupted by the war. In a sense, he did not give everything he had got to his thesis work. He seemed to be annoyed by a rather unbalanced mental state. Later, he very honestly recalled his state of mind in those days at Oxford in the following way.

I wrote a draft of a thesis but my examiners quite rightly ruled that it was not a finished product and should be revised. However, I was too pessimistic about its future to comply, so I had to be satisfied with the less prestigious degree of B. Litt. [ or Bachelor of Literature].

(McKenzie, 1999, p. 3)

Thus, being almost heartbroken, he came back to his beloved place, namely Duke University, the United States. Those troubles, however were soon destined to be over. Although he pessimistically felt that his thesis written at Oxford was not a finished product, he never gave up, and regained his strength after safe return to the place where he was born.

Meantime, he dared to go to the University of Chicago together with the Cowles Commission for purpose of devoting himself to study again advanced mathematics such as abstract algebra, measure theory and topology. Speaking of myself, I had a similar experience at Kobe University, wrestling with the hard

choice between mathematics and economics. It was truly my sad memory that one of my close friends, whose major used to be economic theory but turned to advanced abstract mathematics, took an excessive amount of sleeping medicine to say good-bye to his life.

After McKenzie managed to overcome psychological distress, he eventually succeeded in writing his memorial paper “On equilibrium in Graham’s model of world trade and other competitive systems”, which was delivered to the Chicago meeting of the Econometric Society in December 1952.<sup>5)</sup> This meeting was very exciting and impressive, so that McKenzie later wrote the following remark:

This was the same meeting to which the Arrow-Debreu paper on existence was reported.

Debreu was present at my presentation and made an intervention to suggest that my paper was implied by theirs, which had been delivered earlier at the meeting. Though I had not heard it, I responded that my paper no doubt implied theirs. Literally, both statements were false. Their paper used consumer utility function Debreu’s theorem on the existence of a social equilibrium, which depended on the fixed point theorem of Eilenberg and Montgomery, while I used demand functions and more elementary Kakutani fixed point theorem. I had learned about the Kakutani theorem from a working paper by Morton Slater, the resident mathematician at the Cowles Commission.

(McKenzie, 1999, p.5)

As McKenzie wisely noticed above, there were two similar yet different fixed point theo-

5) The paper of McKenzie (1954) was the monumental paper in which the Kakutani fixed point theorem was first used for the existence proof of general equilibrium. Unfortunately, its significance was not properly appreciated, thus being unfairly excluded from the Nobel economic prize. I guess that the naming of “Graham’s model of world trade” did seem appealing to the prize selection

committee. For details, see Weintraub (2011) and DÜppe & Weintraub (2014).

rems — the Eilenberg-Montgomery theorem and the Kakutani theorem. Which one of those two theorem should be employed for the proof of existence of general equilibrium constituted a very important problem for general equilibrium theory.<sup>6)</sup>

At the symposium of Linear Programming at Princeton University in 1956, McKenzie happened to meet Oscar Morgenstern. Then, Morgenstern kindly asked McKenzie if McKenzie would like to have a Ph.D. So, McKenzie got a Ph.D. at the age of 37, which seemed to be long overdue in the light of American standard and his outstanding contribution to mathematical economics. Speaking of myself, I fortunately received a Ph.D. from Rochester at the Age of 32, definitely at a younger age than McKenzie, my great mentor. I could see here that personal histories were often bitter and unfair.

**1-3. Lionel W. McKenzie as “Professor Fixed Point”**

When I was admitted to Graduate School of Economics, the University of Rochester, there were a great number of “star professors” as well as many “star students”. Among those famous professors, there existed Lionel W. McKenzie in the field of general equilibrium theory, Ronald W. Jones in international trade theory, Chou E. Thiang in international finance, Edward Zabel in the theory of the firm, Hugh Rose in economic dynamics, Emmanuel W. Drandakis in microeconomics, Richard W. Rosett in econometrics, Walter Oi in monetary economics, Richard N. Fogel in econometric history and many others. And among “star students” receiving Ph.D.s over the years, there were Akira Takayama, Akihiro Amano, Jerry

Green, Jose Sheinkman, Hiroshi Atsumi, and so many others.

In what follows, let me focus on the teaching and researching aspects of my great mentor, namely Lionel W. McKenzie. At the University of Rochester, he exerted all his energy to lecture his favorite subject “general equilibrium theory.” At the beginning of each lecture, he carefully delivered his hand-written note to all attending students. As could easily be expected, such a personal note was rather disordered and not easily comprehensible to all the students. Besides, each page of the note was full of highly mathematical symbols and equations together with added corrections and remarks, thus producing a lot of extra hours and big headaches to the students. It was quite lucky to say that I have long kept a complete note of McKenzie’s lecture note at my private study until today. For the exact contents of this note, please see Table 1.<sup>7)</sup>

I was a very enthusiastic student in McKenzie’s class. I always sat and took my note in the front row, carefully listening so as not miss a single word. His class used to be strangely rather quiet except his confident voice. He was

Table 1. Lionel W. McKenzie’s Legendary Lecture Note on, “General Equilibrium Theory”, Rochester, Fall 1969.

The Contents of Professor McKenzie’s Lecture Note	
Chapter 1	Theory of Demand
Chapter 2	Stability of Equilibrium
Chapter 3	Leontief’s Systems
Chapter 4	Comparative Statics
Chapter 5	Pareto Optimality
Chapter 6	Existence of Equilibrium
Chapter 7	Capital Accumulation

6) For the relation between general equilibrium theory and fixed point theorem, see Arrow & Debreu (1954), Arrow & Hahn (1971), McKenzie (1954), McKenzie (1969), Nikaido ( 1956), and others.

7) For details, see McKenzie (1969). I now strongly feel that McKenzie’s original lecture note represents one of the my greatest personal assets, which should be preserved forever.



almost always marking mathematical equations but sometimes sitting and thinking on empty chairs. When he was lecturing Chapter One of “General Equilibrium Theory”, he suddenly posed and introduced to us a quite recent paper written by a young promising professor Van Mosek. I now vaguely recall that Mosek’s paper was entitled something like “A new approach to the equivalence of the weak and strong axioms of revealed preference.” McKenzie asked us whether or not there would be a volunteer who could read Mosek’s paper in two weeks and make a short comment before us. All of sudden, the class became quiet. I then seemed to be a brave person to raise my hand and replied as follows. “Yes, sir. We are students and have no choice but to go. I am quite ready to become such a volunteer.” Then, there was a loud burst of laughter. In hindsight, my prompt reply of “no choice” turned out to be really “a really big choice” for my academic career. In fact, in the following two weeks, I found several weak points in Mosek’s otherwise very good paper. I succeeded in correcting them, writing a much better note than Mosek’s original. And not long, my original note inspired by Mosek’s new approach could be still further developed as the very first chapter of my Ph.D. thesis. As the saying goes, adversity is the patent of virtue! Let me write down in Table 2 the contents of my thesis submitted to the University of Rochester. For details, see Sakai (1972).<sup>8)</sup>

The comparison of Tables I and II clearly demonstrates how much influence Professor McKenzie gave his student Yasuhiro Sakai. Around in the late 1960s and the early 1970s, I was a faithful believer in general equilibrium theory in which McKenzie together with Ar-

**Table 2.** Yasuhiro Sakai’s Ph.D. Thesis, “The Axiomatic Foundations of Consumption and Production Theories”, Rochester, Fall 1972.

The Contents of Yasuhiro Sakai’s Ph.D. Thesis	
Part I Axiomatic Foundations of Consumption Theory	
Chapter 1	Equivalence of the weak and strong axioms of revealed preference without demand continuity assumptions
Chapter 2	Revealed favorability, indirect utility, and direct utility
Part II Axiomatic Foundations of Production Theory	
Chapter 3	An axiomatic approach to input demand theory
Chapter 4	Substitution and expansion effects in production theory: the case of joint production

row and Debreu was no doubt a leading economist in that field. Combining the initials of those three dominant economists, a friend of mine used to say a joke to us. “We are now swallowed in the “Great Wave of MAD [i.e. McKenzie-Arrow-Debreu].” Indeed, the current of the times was so powerful that it gave a dominant influence to all the young students including me.

Recalling McKenzie’s famous lecture, he bravely introduced very advanced mathematical tools such as differential topology into economics. I guess that even at Rochester, the frequent use of topology in economics teaching gave many students a great shock. I was a sort of lucky student because prior to Rochester, I had studied advanced topology and measure theory at Science Department, Kobe University. One of his favorite mathematical tools was the famous Fixed Point Theorem,

**8)** For details of my Ph.D. thesis, see Sakai (1972). I would like to keep it as far as I am alive.

which was first established by great mathematicians such as L.E.J. Brower and Shizuo Kakutani. I have ever met Kakutani at a mathematical workshop at Rochester. That was a very interesting yet strange seminar, in which he read his “unfinished paper”. He smiled and honestly said to us. “Well, ladies and gentlemen, the paper I am going to read today is unfortunately unfinished. However, someday in the near future, I hope that it will be finished. Today, all I can show you is why and how my proof process has to stop. I am sure that it will help you to understand that mathematics is a difficult yet very attractive science.” Then, all the audience laughed and applauded his honest yet excellence performance. I myself could never forget such a strange yet fantastic seminar at Rochester.

Now, getting back to the McKenzie seminar, he repeatedly talked about the power and beauty of the Fixed Point Theorem for several weeks. As a result, all the students seemed to be tired of the theorem. So, it would be quite natural to understand that McKenzie acquired a “honorable nickname” of “Professor Fixed Point”. In fact, in the class room, he stood alone and tall around all the students sitting quiet.

The way in which he taught general equilibrium theory was legendary. There was something dignified in his teaching: using a large blackboards in a classroom, he always wrote so many definitions and axioms before proceeding to prove a series of mathematical theorems and theorems. All the sitting students seemed to be just quiet, taking great pains in making their lecture notes as exact as possible.

No one could have a doubt as to his power and ability of advanced mathematics. Indeed, he was a passionate researcher in application of differential topology to economic science. It was true that he almost always controlled his class authoritatively. No person should be absolutely perfect, however. I remember that there was an occasion when he was a bit nervous in mathematical derivations and pondered for some time while grasping a piece of white chalk in his right hand. Whenever his right hand raised and approached to his face, the color of his lips gradually changed from reddish to whitish: he forgot the inescapable reality that the white chalk happened to touch his lips. Occasionally, he spoke the familiar names of several Japanese economists in heavy (or rather correct) English accents such as “Morry-see-ma” (meaning Michio Morishima), “Woo-za-were” (Hirofumi Uzawa), “Knee-kai-dow” (Fukukane Nikaido), Inner-da (Ken-ichi Inada), and Nay-gee-see” (Takashi Negishi). Yes, they must be Japanese names, but sounded to me like American names. Whenever I heard those names, however, I was a bit excited, taking some pride in my nationality.

I still remember the occasion when McKenzie did not feel well and unfortunately got struck in a mathematical jungle. This incident took place when he was about to finish the rigorous proof of general market equilibrium solution. He knew that the mathematical tool needed was no less than the effective use of the fixed point theorem. Then, he stopped walking and began to fold his arms, holding a piece of white chalk with his right hand. After five minutes or so, his cheek suddenly got much brighter than ever before. nodding his head to himself, “I’ve got it!” And after completing

the existence proof successfully, he convincingly yet rather quietly muttered with the following sigh.

“Oh, it’s so beautiful !”

I should add that the voice was only faintly heard to me. I was lucky enough to set on the very front row. Unquestionably, McKenzie’s lecture on general equilibrium theory was mathematically so beautiful that it greatly impressed all the students in his class. Honestly speaking, however, his inclination toward mathematical beauty seemed too much to us. In academic activities, if we seek “beauty” in addition to “logic” and “ethics”, we should be demanding too much. Then, we would possibly be caught in inescapable pitfalls in the sense that we vainly searched for a sort of “utopian capitalism” or rather “elegant nihilism”. A will-o’-the-wisp would be burning and sneer at us forever!

## **II Richard W. Thaler on Behavioral Economics**

### **2-1. From General Equilibrium Theory to Economics of Uncertainty**

As soon as I received a Ph.D. degree in economics from the University of Rochester, the State of New York, I was so lucky to get a teaching job at the University Pittsburgh, the State of Pennsylvania. Although on the road map, Pittsburgh was not far away from Rochester, the difference between those two cities was considerably large in the light of weather and culture. Pittsburgh was warmer and less snowy than Rochester, I did not need to wear on extra clothes and shoes: indeed, I said farewell to

cold weather protection boots and hat. Besides, the faculty members and students were much more amiable and friendly at Pittsburgh than at Rochester.

While I was teaching general equilibrium theory at Pittsburgh for four long years, I gradually feel the gap between a very utopian theory and a harsh reality in the “Iron City” where all the people struggled to make a living. My serious doubt over the well-publicized proposition that a competitive equilibrium attained the very best combination of “truth, good, and beauty” began to cross my mind. I still remember my exciting meeting with Oscar Morgenstern, a world-famous pioneer of the theory of games, who happened to come to Pittsburgh in 1973 to give a general lecture on the present states of economic theory. Being among the enthusiastic audience, I bravely took a courage to ask a rather pointed question to him:

Professor Morgenstern, I am a young economist at Pittsburgh. Sir, I haven very impressed by your instructive lecture today. To tell the truth, however, I am not so happy about the present states of economic science. As far as I can see, it seems that there exist a big gap between the abstract assumptions of pure theory and the harsh facts in reality. In order to fill in the gap, I would strongly feel the necessity to establish a new approach to a variety of socio-economic problems today. If you have some suggestions in this direction, please let me know.

Morgenstern at first appeared to perplexed a bit, but soon composed himself. Then, he kindly began to answer my question.



Oh, Mr. Sakai, if I am not mistaken, you look still young and have a lot of potential. I can tell you that fortunately, there appear a new wave of economic thinking, that is, the economics of uncertainty promoted by a group of young economists like you. Why don't you join the group right away?

The keyword “uncertainty” sounded like a sort of revelation or “Sermon on the Mount.” The word itself seemed to be uncertain to me. What was it all about? Since then, I shifted all my energy into an investigation of uncertainty although I had already read several articles by George Akerlof, Michael Spence, and Joseph Stiglitz. Surely, they were all young and lively scholars as old as me, so that I hopefully could join the “promising club of uncertainty”. Moreover, both Akerlof and Stiglitz were then the favorite students of Professor Hirofumi Uzawa, or briefly Hiro, who was one of the most influential Japanese economists teaching at the University of Chicago.

On looking back into my Rochester days, my research was never alien to the economics of risk and uncertainty. For one thing, Edward Zabel and James Friedman opened the attractive course “theory of uncertainty and games,” in which I myself was a very attentive student. They were very kind and even generous professors: in fact, every time the evening class was finished, we had a very happy time of chatting and drinking together at the faculty club. For another, Richard Thaler, one of my very good friends at Rochester and much later a Nobel prize winner, enthusiastically advised me to take a variety of courses including “economic history” and applied economics”. Thaler was

then nicknamed as “Mr. Going My Way” among fellow students, and once casually talked to me as follows. “You will surely find much interest in the history of slave trade and its impact on American economic development. I would even lend you some important materials.” Moreover, there were two outstanding professors at Rochester — Robert Fogel and William Engelman. To my deep regret, however, I did not give enough attention to the importance of econometric history. As a result, I was just content to limit my attention to very pure theories including general equilibrium theory, microeconomics and economic dynamics. As the saying goes, it is the fish you lose that are the biggest.

At Pittsburgh, I spent the strange double life of a teacher of general equilibrium theory at daytime and a researcher of the economics of risk and uncertainty at night. As a result, although I could publish so many papers on general equilibrium for the first four years, my publication on risk and uncertainty had to be delayed much later. At last, after coming back to Japan in the late 1970s, I succeeded in publishing the new book entitled *The Economics of Uncertainty*, whose contents were to be seen in Table 2.

Although its Japanese version was well-received by many readers, the more ambitious English version had been long-awaited but resulted in a futile effort.<sup>9)</sup>

With respect to Table 2, let us have a close look at Chapter 4 “Expansion of expected utility theory”. There, although the expected utility theory was already dominant in academic circles, I bravely discussed a number of generalization attempts even at early stages. For a example, in their joint paper in 1979, Daniel

9) For details on the economics of risk and uncertainty, see Sakai (1982). It was very lucky that it was well-received in the academics. Dr. T. Hatta and many other friends of mine constantly encouraged me to write its English version. It was my regret that I failed to keep my promise with them. As the saying goes, saying is one thing, but doing is another. As an alternative project, I intensively

Kahneman and Amos Tversky made use of human psychology in order to explain divergences of decision making from the traditional expected theory. By newly inventing what they called “prospect theory”, they vividly showed us the presence of several “psychological biases” in decision making. First of all, people had psychological tendency to unnecessarily overestimate “a 100%-sure event” against “a only a 95 %-sure event”. Such a decision bias could be called “certainty bias” in human decision making. Secondly, people had mental tendency to be much more sensitive to “loss” than “gain”. This demonstrated the undeniable fact that people’s non-symmetric behavior between losses and gains. In a sense, people had “risk aversion bias”. In fact, although it was rather so easy to forget a lucky event such as passing an entrance examination, being unsuccessful in the exam sounded like a critical disaster whose bad memory could last forever.

When I wrote a book on uncertainty at an earlier date of 1982, I thought that my research covered almost all related areas. It was quite regrettable, however, that my judgment was a too hasty conclusion. Meantime, my old classmate Richard H. Thaler published a number of excellent books and papers on the new subject on behavioral economics, researching the interaction between economics and psychology. I now sincerely congratulate his outstanding accomplishments on the field of “behavioral economics.” I hope that I myself will make a contribution on such a new horizon.<sup>10)</sup>

discussed the comparison between J.M. Keynes and F.H. Knight with reference to risk, probability and uncertainty in Sakai (2019). Now, I am planning to write another English book on behavior economics in relation to economics of uncertainty. The nice book of Ida (2017) will be helpful for my new project. Now, I want to say this. Old boys, be ambitious!

**Table 2. Yasuhiro Sakai “The Economics of Uncertainty”, Yuhikaku Co., Tokyo, 1982**

The Contents of Yasuhiro Sakai’s Book on Uncertainty	
Chapter 1	Uncertainty and economics
Chapter 2	Decision making under risk
Chapter 3	Rational behavior and measurable utility
Chapter 4	Extension of expected utility theory
Chapter 5	Measures of risk aversion
Chapter 6	Changes in risk
Chapter 7	Theory of portfolio selection
Chapter 8	Theory of savings
Chapter 9	Theory of the firm under uncertainty
Chapter 10	Uncertainty and general equilibrium
Chapter 11	Analysis of Insurance
Chapter 12	Imperfect information and insurance market
Chapter 13	Analysis of self selection

## 2-1. Richard H. Thaler as “Mr. Going My Way” at Rochester

At present, a new wave of economic science such as behavioral economics is coming to the academic world. Although there is a growing number of economists in this field, Richard H. Thaler is clearly one of most remarkable pioneers. According to my memory, Thaler was not only a good friend of mine but also a very unique student at Rochester. He was so frank and friendly to everyone, and nicknamed “Mr. Going My Way”. In the following, let me discuss his personal life and academic work in more details.

Thaler was born in New Jersey in September, 1945. It is worth noting that he has a Ukraine connection: Indeed, his great-great-grandfather was from Ukraine. After he

**10)** Sherwin Rosen served as a graduate student advisor at Rochester when both Thaler and I were Ph.D. candidates. Rosen was almost as old as both of us, being very helpful to all the students. With respect to the revision of my passport administered by the Immigration Bureau, I was particularly indebted to Rosen for his kind and appropriate advice.

received his B.A. degree in 1967 from Case Western Reserve University, he moved to the University of Rochester to receive his M.A. in 1970 and Ph.D. degree in 1974 from the University of Rochester. In comparison, I was born in Osaka in December 1940. After I got my B.A. in 1962 from Kobe University, I moved to the University of Rochester to get my M.A. in 1970 and Ph.D. in 1974. Apparently, the academic careers of both Thaler and I seemed to be similar and overlapped except the difference of nationalities. It was a sort of miracle that both of us (i.e. Thaler and Sakai) stayed in Rochester for almost the same period from 1968 to 1974.

Thaler received his doctor degree from Rochester by writing his thesis on “The Value of Saving a Life: A Market Estimate” under the supervision of Sherwin Rosen, who kindly helped many students a lot as a graduate student advisor.<sup>10)</sup> Besides, he also did much research under Richard Rosett, who succeeded to take over the economics department chairman from the founder Lionel W. McKenzie. At first glance, Thaler’s thesis had nothing to do with his life work “behavioral economics”. This impression, however, turned out to be just superficial. Interestingly enough, Rosett’s wine-buying habits served as a good impetus for Thaler to change his research direction to the interaction between economics and psychology. Let the reader pay attention to the following remark by Thaler:

One case came from Richard Rosett, the chairman of the economics department and a long time wine collector. He told me that he had bottles in his cellar that he had purchased long ago for \$10 that were now worth

over \$100. In fact, a local wine merchant named Woody was willing to buy some of Rosett’s older bottles at current prices. Rosett said he occasionally drank one of those bottles on a special occasion, but would never dream of paying \$100 to acquire one. He also did not sell any of his bottles to Woody. This is illogical. If he is willing to drink a bottle that he could sell for \$100. But then, why wouldn’t he also be willing to buy such a bottle? In fact, why did he refuse to buy any bottle that cost anything close to \$100? As an economist, Rosett knew such behavior was not rational, but he couldn’t help himself.

(Thaler, 2005, p. 17)

Rosett was the chairman of the economics department, kindly taking care of all the students including myself. He came to the department office almost everyday, happily chatting with fellow teachers as well as secretaries. As the good characters and lively moods of both Rosett and Thaler seemed to be very similar, it was no wonder that they were fond of talking about wine collection. It is true that both of them were wine drinkers. However, Rosett’s love for wine was much more fanatical than the more calculable Thaler. In Rosett’s mind, drinking wine was “something special beyond rational calculation of cost and benefit.” Such a seemingly non-rational behavior seemed to be beyond the power of understanding of the economic man Thaler.

The above-mentioned episode of Rosett’s maniac behavior was very famous, constituting the starting point of his pet subject on the relationship between economics and psychology. It is remarkable that more recently, Thaler

(2018) also made a similar, but a bit different, remark on Rosett’s habit of keeping vintage wine bottles:

The chair of the University of Rochester Economics Department (and one of my advisers), Richard Rosett, was a wine lover who had began buying and collecting wine in the 1950s. He had purchased some choice bottles for as little as \$5 that he could now sell to a local retailer for \$100. Note that Rosett had a rule against paying more than \$30 for a bottle of wine, and he did not sell any of his old bottles. Instead, he would drink them on special occasions. In summary, he would enjoy his old bottles worth \$100 each, but he would neither buy nor sell at that price. Therefore, his utility of one of those bottles was both higher and lower than \$100. Impossible.

(Thaler, 2018, p. 17)

Is the chairman Rosett’s special love for vintage wines really non-rational? I would not think so. To almost all of goods and services, he applied the traditional analysis of cost and benefit. However, there should be some exceptions for the general rule, with vintage wines representing one of those exceptions. Rosett’s seemingly non-rational behavior merely taught us that he was then an ordinary man with love and passions.<sup>11)</sup>

## 2.2. Richard H. Thaler as “Professor Misbehaving” at Chicago

Since Thaler was impressed by Rosett’s special love for wines at Rochester, he stayed in a year at Stanford University between 1977 and 1978., At a comfortable place like Stanford,

Thaler spent a happy academic life with the two pioneers of behavioral economics — Daniel Kahneman and Amos Tversky (1979,1992). Between 1978 and 1995, he worked for Cornell University, and finally was offered a position at the University of Chicago.

He has written so many books and papers in his pet subject — behavioral economics. In my opinion, one of his best writings was no doubt the well-known book *Misbehaving: The Making of Behavioral Economics*, 2005.<sup>12)</sup> Its general outline of contents was shown below in Table 4.

As the titles of this book easily told us, its writing style per se seemed to be “misbehaving.” One of the reviewers said that Thaler’s book on *Misbehaving* was so odd and even funny. As always, his writing style was not regular but “misbehaving.” Nevertheless, it hit the center of the target: indeed, it was the study of real human beings rather than the ultra-rational optimizers of main-stream economic theory.

Table 4 Richard H. Thaler, “Misbehaving: The Making of Behavioral Economics”, Norton, 2005.

The Contents of Thaler’s Autobiographical Text
Chapter 1 Beginnings: 1970-78
Chapter 2 Mental Accountings: 1976-85
Chapter 3 Self-Control: 1975-88
Interlude
Chapter 4 Working with Danny; 1984-85
Chapter 5 Engaging with Economics Profession: 1986-94
Chapter 6 Finance: 1983-94
Chapter 7 Welcome to Chicago: 1995-Present
Chapter 8 Helping out: 2004-Present

11) There was my unforgettable episode with Rosett when we were both attending the Econometric Society Meeting at Ex-an-Provence, Southern France in 2002. There, I happened to meet him at a French restaurant. According to my memory, he was then drinking nice French wine. Surely, Rosett was a famous wine lover as Thaler pointed out.

12) Thaler has published so many publications so far. For details, see Thaler (2005) , Thaler (2018), Thaler & Sunstein (2008), and others.

When I was delightfully reading Thaler's nice book (2005) on behavioral economics, I was quite impressed by the following personal remark which the pioneer Danny Kahneman told the young Thaler at Berkeley:

Oh, the best thing about Thaler, what really makes him special, is that he is lazy.

(Thaler, 2005, Preface, p. xvi)

Perhaps, Kahneman was then joking to Thaler. However, this was really the good joke which contained a "paradoxical truth." Honestly speaking, Thaler was not a "star student" but "a rather misbehaved student" at Rochester: in fact, he was "lazy enough" to skip the tough course of general equilibrium theory taught by the star professor McKenzie. Paradoxically, I believed that this made Thaler so special as Kahneman observed it. And, later at Chicago, Thaler turned out the distinguished man nicknamed "Professor Misbehaving." As the saying goes, an evil may sometimes turn out a blessing in disguise.

Subject to the space constraint, I would like to pick up only two important topics from the whole body of Thaler's book — the "endowment effect" and the "nudge effect". The first endowment effect was closely related to the certainty bias that was already discussed in relation to the prospect theory of Kahneman and Tversky. It is related to the non-symmetric behavior of a human behavior in the sense that the good they already owned was evaluated more highly than the same good they did not own but wanted to buy. More exactly speaking, people were more likely to firmly retain an object than the same object people did not own it. Showing another example of the en-

dowment, workers worked harder to firmly maintain the bonus they already acquired than they worked for the same bonus they did not acquire but just hoped for.

The second nudge effect was more famous than the first endowment effect: it was truly very characteristic of the "misbehaving person" Thaler. One of the most famous examples of a nudge was the simple drawing of the image of a housefly into the men's room urinals at Amsterdam Airport. It was ingeniously but effectively intended to "improve the original aim." The nudge effect was applied to many economic and non-economic areas including government policies, business management, and healthcare problems.<sup>13)</sup>

There have been many arguments for or against nudge theory. Not a few people say that compared with traditional economic theories equipped with "heavy mathematical tools", nudge theory seems to be a "light theory without heavy mathematics tools". I believe that although the ayes and nays were once equally divided, the pros have now gained much more popularity against the cons. It is noted that Thaler himself confidently remarked:

It has now been more than forty years since I first began writings of the List on my office blackboard. Much has changed. Behavioral economics is no longer a fringe operation, and writing an economics paper in which people behave like Humans and no longer considered misbehaving, at least by most economists under the age of fifty.

(Thaler, 2005, Conclusion, p. 347)

According to Thaler, the age of fifty seemed to be the dividing line between the pros

**13)** I am sure that nudge theory represents the main work of my old friend Thaler. So, he may also be nicknamed "Professor Nudge".



and the cons. I myself is much older than sixty. Nevertheless, I am now gradually inclined to join the club of the pros.

### III | Econs or Humans: Towards New Economics

In the above, I have intensively discussed the life and work of my old and good friend Richard H. Thaler. Reading his nice book on behavioral economics, he is an excellent writer with critical eyes, sharp tongues, and splendid humor.

He has frequently said that we are not merely econs as old economists described, but rather much more humans with passions and emotions. Concerning the difference between econs and humans, Thaler clearly remarked:

It has never been my point to say that there is something wrong with people, we are all just human beings — homo sapiens. Rather, the problem is with the model being used by economists, a model that replaces homo sapiens with a fictional creature called homo economicus, which I like to call an Econ for short. Compared with this fictional world of Econs, Humans do a lot of misbehaving, and that means that economic models make a lot of bad predictions, predictions that can have much more serious consequences than upsetting a group of students.

(Thaler, 2005, p. 4)

I repeatedly said to the reader, I am a “Rochester man, or simply Rochesterian”. For one thing, I was trained as a general equilibrium theorist under the supervision of the great teacher Lionel W. McKenzie, who always as-

sumed the existence of Econs. For another, I had a good friend at Rochester, whose name was Richard H. Thaler, who had a serious doubt on the assumption of Econs and instead promoted the activity of Humans.

Under the circumstances mentioned above, my academic position must be very delicate. Although I am now a bit inclined to go towards the new side of Thaler, his arguments seems to be “light and rather superficial”, lacking the solid foundations of theory. Moreover, there are something important remaining in the solid theory of McKenzie on general equilibrium. Perhaps, we will need the arrival of the new Thaler for total completion. Hopefully, the fresh blood will come on the academic stage and nicely blended with the old blood.

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This paper is mainly concerned with the relationship between economics and psychology, with special reference to Lionel W. McKenzie, Richard H. Thaler and the University of Rochester. Since both Thaler and I happened to be graduate students at Rochester around in the same period, the major part of this paper should be destined to be the product of our common “period of storm and stress” mixed with each personal histories and experiences. In the 1960s and the 1970s, “Marxian economics” based on *Das Kapital* eloquently written by Karl Marx seemed to overpower “modern economics” rather quietly promoted by a group of American economists. Although I myself studied by the two opposing streams of economics, I decided to continue my graduate studies in the United States in order to escape from utter chaos and demonstrations reigned on many Japanese university campuses. The University of Rochester was a sort of ideal place for my graduate studies, with the economics department led by many star professors such as Lionel W. McKenzie as “Professor Fixed Point”. While many bright students generally took his general equilibrium course, there were always some exceptions, a notable one being Richard H. Thaler nicknamed “Mr. Going My Way.” Thaler, a good friend of mine, devoted deep study to behavioral economics in his own way. After he left Rochester, he got a job at Cornell and Stanford, eventually becoming

a distinguished professor at Chicago. I am now very proud of having close relationship with apparently opposing types of outstanding economists – McKenzie and Thaler. I expect to see the arrival of the second Thaler in the near future.