COE-RES Discussion Paper Series
Center of Excellence Project
The Normative Evaluation and Social Choice of
Contemporary Economic Systems

Graduate School of Economics and Institute of Economic Research
Hitotsubashi University

COE/RES Discussion Paper Series, No.37
February 13, 2004

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This Draft: February 2004

1 Introduction

Social Choice and Welfare has a tradition of interviewing pioneering contributors to welfare economics and social choice theory to keep their recollections on the formative stages of their seminal work, their current views on the past and present states of the art, and their perspectives on the agendas to be pursued in this branch of normative economics officially on record. Professor Paul Samuelson has been on the list of potential scholars to be interviewed for a long time in view of his enormously influential contributions to economics in general, and theoretical welfare economics in particular. Indeed, the purpose of these interviews would not be served unless and until we could interview a scholar "who before 1938 knew *all* the relevant literature on welfare economics and just could not make coherent sense of it," and is willing "to set the record straight as only a living witness and participant can [Samuelson (1981, p.223)]." In November-December 2000, this long overdue interview with Professor Samuelson finally took place in his office at MIT. It started from the list of preliminary questions I had submitted to him beforehand. Needless to say, he had much more to offer, which coloured and enriched this interview. To facilitate the readers' better appreciation of the rich information provided by Professor Samuelson, I added a few footnotes and provided an extensive list of references so as to bridge what Professor Samuelson is recalling in that context with what the readers would benefit by reading the existing literature. It is in the similar vein that I inserted some relevant passages from Professor Samuelson's and others' past writings into my questions to him so as to locate this interview in better perspective. It is hoped that

*I am most grateful to Professor Paul Samuelson whose kind collaboration and generous sacrifice of his time made this interview possible. Thanks are also due to Professors Kenneth Arrow, Marc Fleurbaey, Peter Hammond, Prasanta Pattanaik, and Amartya Sen, with whom I had many conversations over the years relating to the subjects discussed in this interview. My deep gratitude goes to Professor Nick Baigent who kindly read several drafts of this paper and gave me detailed comments which led to the improvement of substance as well as exposition of the final draft. Needless to say, nobody other than myself should be held responsible for any remaining deficiency of the eventual outcome.

these added materials would not distract the readers' attention from the real and novel gem contained in this interview.

2 Interview

KS (Kotaro Suzumura): Thank you very much for giving me this opportunity to interview you on behalf of the Society for Social Choice and Welfare. In Chapter VIII of your *Foundations of Economic Analysis*, you have given a brief, yet fairly comprehensive overview of the whole area of welfare economics at the time of your writing. At the risk of a slight overlap with what you have already explained there, let me begin by asking you about Arthur Pigou and his "old" welfare economics, and the subsequent advent of the "new" welfare economics.

2.1 On Pigou's "Old" Welfare Economics

KS: Several people including your former teacher, Joseph Schumpeter, in his *History of Economic Analysis*, as well as yourself in Chapter VIII of the *Foundations of Economic Analysis* traced back the origin of welfare economics far beyond Arthur Pigou's *Economics of Welfare*. However, John Hicks was technically right, wasn't he, when he asserted that "[if welfare economics] existed before Pigou, it must ... have been called something else [Hicks (1975, p.307)]." What is your current view on the status of Pigou in welfare economics in general, and his "old" welfare economics, so-called, in particular?

PS (Paul Samuelson): Yes, but first, let me say this. Since you referred to Chapter VIII of the *Foundations of Economic Analysis*, you should be alerted to the fact that I prepared an enlarged edition of the Foundations in 1983. I did not change the text of the original edition, but I added the Introduction to the Enlarged Edition on the development since the original edition. Mostly, I do not consciously feel changed in my views on welfare economics after the 1938 clarification of the subject by Abram Bergson, but a reader who read Chapter VIII should perhaps also read the corresponding part of the Introduction to the Enlarged Edition, pp.xxi-xxiv, because I remark specifically there on the change in my thinking on welfare economics due to John Harsanyi's 1955 article published in the *Journal of Political Economy*.

Let me now answer your question. I understand why Hicks made that sentence, but I think it is not a very useful or accurate sentence. We take nothing away from Pigou when we remember that he was a culmination of a long tradition called "moral philosophy." It was this long tradition that Pigou first crystallized into the *Wealth and Welfare* in 1912, and then into the *Economics of Welfare* in 1920.

I had a great admiration for Pigou. I thought that, in many ways, he was not only a faithful follower of Alfred Marshall, but he was also a more fertile developer of the Marshallian tradition than Marshall himself. He was too faithful to Marshall in his language, and he never disagreed with Marshall. A great philosopher, Alfred Whitehead, came to Harvard in 1924 after retiring from the University of London. This is long after Russell and Whitehead's *Principia Mathematicae*. Whitehead said to me: "Don't you think that Pigou was an overrated economist? Wasn't Foxwell a better man?" Herbert Foxwell had been the candidate who was expected to succeed

Marshall's chair when Marshall retired. But Marshall manipulated and contrived that the 30 year old Pigou receive the chair. Since I am an honest man, I said to Whitehead: "No, I think Pigou was a much more important economist than Foxwell."[1]

I think Pigou was a very fertile economist. He of course worked to a very old age, but I am much older than he was in his old age. I knew the Economics of Welfare well, including a fundamental mistake in it, which was not corrected until about the third or fourth edition. The mistake, which was common to Marshall and Pigou, was that Pigou believed that increasing cost industries should be taxed and the tax revenue collected should be used as a transfer subsidy to constant cost industries. He would have said: "... and to decreasing cost industries." However, decreasing cost industries were never handled properly by Marshall. Indeed, they are incompatible with laissez-faire competition and Marshall knew it. Thus, most of the thoughts which were worked out by my teachers' generation and by my own generation were in Marshall. He actually knew about it in 1890. John Neville Keynes, the logician and the father of John Maynard Keynes, was a friend of Marshall and a kind of an assistant, who warned Marshall: 'Your consumers' surplus is wrong, and you will be picked on." But, instead of Marshall's going to work and going beyond his at best approximation under certain conditions, he never did do it.

I think Marshall was a great economist, but he was a potentially much greater economist than he actually was. It was not that he was lazy, but his health was not good, and he worked in miniature.

Pigou's mistake was pointed out by Allyn Young, then at Cornell, who was the teacher both of Edward Chamberlin and Frank Knight, in his Book Review of the Wealth and Welfare published in Quarterly Journal of Economics. He pointed out that, in modern language, it is Pareto optimal for rents to rise in an increasing cost industry, and that should be built into the price that is paid under laissez-faire, because that is the socially optimal way of organizing the allocation of resources. Pigou and Marshall got confused on this, because they brought in the externality argument. Now externality is very important — the whole theory of public goods, I guess, is a case of externalities proper. But, in the absence of any externalities, if you have the law of diminishing returns, let variable labor be applied to fixed land, and when there is expansion of the demand for good vineyard wine, that raises the rent. If the marginal cost is rising, that should be built into the laissez-faire price.

Somewhat redundantly, Frank Knight made essentially the same point in his important article, "Some Fallacies in the Interpretation of Social Costs," published in Quarterly Journal of Economics. Dennis Robertson, a good Cambridge economist, also made essentially the same point independently in 1924. Isn't it interesting that Pigou never had corrected it until maybe the 1932 edition? I looked for Allyn Young's name in the 1932 edition. It is there, but not in this connection, but in connection with the discussion of depreciation, which is irrelevant for our present purpose. Isn't it interesting that this important and world famous scholar did not say: "I made a mistake. I corrected it, but I owe thanks to Allyn Young, and perhaps to Frank Knight and to Dennis Robertson."

Pigou was a much better expositor of Marshall's welfare economics, which was implicit in Marshall, than Marshall himself ever was. Pigou had a mathematical

[1] Those who are interested in Herbert Foxwell's life, work and his relationship with Alfred Marshall are referred to Foxwell (1939), Groenewegen (1995, pp.622-627 & pp.670-679) and Keynes (1936).

structure in his mind, but following Marshall's instructions, he kept it concealed. Also, Pigou did not attempt to go deeply into solving the troublesome problems of fundamentals.

KS: Could you please give us an example?

PS: For example, he says as a recurring theme that if there are very poor people in a market society who do not have the basic necessities of life, then it is manifestly, obviously desirable to make transfers from the more affluent people to the poor people. He has not, however, provided the kind of argument that Francis Edgeworth would have given. Like most classical economists, Edgeworth, a neo-classical economist, was an environmentalist who did not believe in the Darwinian superiority of certain people over others. John Stuart Mill, who had the highest IQ ever recorded, said in his autobiography: "If you had James Mill, your father, training you, you would also have a high IQ." Thus, everybody has the same potentiality, and it is only the environment that makes them different. Likewise, Edgeworth would have shamelessly believed he could measure utility by the Benthamite procedure of measuring "minimum sensible" jolts of just-recognizable increments of pleasure. This is the theory of sensation like the Weber-Fechner Law. So, you draw the utility curve for each person, which is concave embodying the law of diminishing marginal utility. Thus, the extra dollar you get when you have 100,000 dollars of income is less important than the extra dollar you get when you have 10,000 dollars of income. I think that there is a layman's tendency to believe something like that. Most of the sharp solutions in classical welfare economics, or moral philosophy, are for special "Santa Claus" cases of symmetry among individuals. Take, for example, Kant's categorical imperative, or the golden rule in the New Testament: "Do unto others as you would have them do unto you." If you do not believe that human beings are the same, you may have to follow George Bernard Shaw and say that it is not right. Instead, you should say: "Don't do unto your neighbours what you would have them do unto you. Their tastes may be different from yours." The moment you do not have the same utility is the end of the century-old welfare economics or moral philosophy. Thomas Nixon Carver as an over-age graduate student wrote that: "You should equalize the marginal utility of the dollar between rich man and poor man by transfers through progressive taxation." Of course, he said: "I am abstracting from incentive distortions that would take place." Some background like this is, I think, implicit in Pigou. But he keeps it under the carpet rather than arguing it out.

2.2 On Robbins' Criticism of the "Old" Welfare Economics

KS: You have identified in your 1981 Bergson Festschrift article that there exist two distinct schools of the "new" welfare economics. One school is based on the **compensation principles** developed by Nicholas Kaldor, John Hicks, Tibor Scitovsky, Paul Samuelson and others, and the other school is based on the seminal concept of the **social welfare function** due to Abram Bergson and Paul Samuelson. The evolution of both schools was preceded by a harsh methodological criticism by Lionel Robbins against the epistemological basis of Pigou's "old" welfare economics. Would you please give us your personal recollection of the formative days of the "new" welfare economics?

PS: I think Lionel Robbins' essay in 1932 was not only important for my thinking, but was important for the whole profession. I cannot autobiographically relate the influence of Gunnar Myrdal's book, *The Political Element in the Development of Economic Theory*, which was originally published in Swedish in 1930. It was not available to us, but I think there were some quasi-nihilistic views in Myrdal about the conventional welfare economics, which were similar to those in Robbins. These views were not just on Pigou's "old" welfare economics, but on moral philosophy which predated Pigou's 1912 work. Henry Sidgwick would be an important example, and, of course, Jeremy Bentham and John Stuart Mill. But to the lay person, it seems natural that the same loaf of bread is less significant when you already have a hundred loafs of bread than when you have ten loafs of bread. You see it in the Old Testament when King David or somebody has been discussed. One of the prophets gives a parable. There was a King who invited a poor shepherd to dinner. They killed a lamb and made the meat for the dinner. The poor shepherd had only one lamb, and the King had a superfluously large number of lambs. In the course of the dinner, the King said: "By the way, what we are eating is your lamb." The fact that the story could just be told in that way means that every reader could understand that it was a terrible thing to do. That is what I mean by the "old" welfare economics. It can be utilitarian; it can even be hedonistic; it can be additively utilitarian; and interpersonal commensurability is somehow taken for granted. Robbins was not the first to be critical of this tradition, but he was very important as he wrote beautifully, and the book was short. This is the reason why, I believe, the good element of Robbins' book had a very significant influence.

KS: What precisely do you mean by the "good element of Robbins' book"?

PS: It is that you cannot deduce norms by means of science, by measurement of the elasticity of demand, by any other means of the objective observations and model buildings in empirical science. You must put in a normative axiom to get out a normative theorem. This position of Robbins really goes back at least to the philosopher, David Hume. I am separating in Robbins' book a bad element from this good element.

KS: Abram Bergson and yourself were in basic agreement with this good element of Robbins' book, weren't you?

PS: Yes. But, you see, most economists resisted Robbins, because they thought there was nothing left by way of politics, although Robbins never said that. He said: "As a scientist, I cannot tell you this. But, as a voter, I can tell you which way I would go." This view can be traced back to David Hume, who was a great reductionist. I was right for that, because when I was an undergraduate student at the University of Chicago and studying sociology, I had to read William Sumner's *Folkways*. Sumner was a very conservative economist at Yale, but he was a great sociologist. He studied all cultures and showed how what was right in one culture was wrong in another and you could not prove by the methods of science which of them was correct.

KS: What, in your opinion, is the "bad element of Robbins' book"?

PS: The bad element of Robbins' book was that it was more Austrian than Ludwig Mises and Friedrich Hayek. Like Carl Menger and especially Ludwig Mises, Robbins believed in a priori thinking; you could solve all problems of the world in economics by introspection; economics is a deductive science; the deductive laws are much more powerful than any empirical laws and they are independent of almost anything empirical. I was taught something like that Austrian view at the University of Chicago. I was a very young student, but I was a good student. Aaron Dirtector was my first teacher. He is the only man in the world who could truthfully speak of my radical brother-in-law, Milton Friedman, because Milton's wife, Rose Director Friedman, is Aaron's young sister. Aaron believed that Hayek could reason out the business cycle in his 1931 book, Prices and Production, and his lecture without any command of any important facts about the business cycle. The first edition of Robbins' essay is full of that view. It was modified a little bit later, but we should always attach importance to the first edition of anything, because in the history of ideas that is pragmatically the simplification which carries the greatest weight.

KS: In your 1981 Bergson Festschrift article, you described the initial thrust of Robbins' criticism as follows: "When Robbins sang out that the emperor had no clothes — that you could not prove or test by any empirical observations of objective science the normative validity of comparisons between different persons' utilities — suddenly all his generation of economists felt themselves to be naked in a cold world. Most of them had come into economics seeking the good. To learn in midlife that theirs was only the craft of a plumber, dentist, or cost accountant was a sad shock."

Could you please cite a few examples of economists who went through this period of turmoil ?

PS: Take, for example, Abba Lerner, who was not that mathematical, but a very clear thinker and really very new in economics. He was 30 years old, I think, when he went bankrupt in the hat business. He wanted to know why he went bankrupt, so he went to the London School of Economics, which was a kind of a nightschool at that time mostly. He was a student of John Hicks, and he wanted to learn about Marxism, because he thought he could learn the necessary lesson there. Hicks has told this in some autobiographical writing. Lerner was unconservative in political philosophy, but, of course, he was not a Marxist. He became very anti-Marxism as soon as he understood Marx. I predicted that he would end up in the arms of Hayek, which proved pretty much true. But, still, he had social sympathies. I don't think John Hicks had any particular social sympathies. He came from the above average class structure in Britain, but not from the elite aristocratic structure as, say, Ian Little did. But, he really talked, like Frank Knight, much more in terms of his own personal economics.

Another example is Simon Kuznets. Interestingly enough, when the Nobel prize was first granted here at MIT, we developed an informal custom of having each Nobel prize winner come to lunch and speak personally about their early history, but we were unable to continue it. Of course, the first two prize winners were Europeans, who weren't available. After me came Simon Kuznets, who studied economics first in Russia before the revolution, because he was interested in the Jewish problem and he thought economics must have a fundamental answer to it. He thought Marxism might give the needed fundamental answer, which is why he went to a commercial university instead of a classical university. But later he changed his opinion.

Likewise, in those days, many scholars started their study of economics in search of the good. For them, Robbin's criticism brought about a sad shock.

2.3 On the Advent of the "New" Welfare Economics

KS: The first step in the attempt to reconstruct welfare economics on the basis of ordinal and interpersonally non-comparable utilities in active response to Robbins' criticism was to develop the concept of "Pareto optimality" and establish the so-called "fundamental theorems of welfare economics". Could you please explain how these crucial steps were taken in the first place?

PS: When I was a student at the University of Chicago, where I was a direct student of Jacob Viner in the classroom, and an indirect student of Frank Knight, I could not learn why price should equal marginal cost. Even when I got to Harvard in 1935, I went around asking everybody: "What is the proof that this is so?" Of course, I did not know the 1892-1893 work of Vilfredo Pareto in which he essentially shows that a perfectly competitive equation system gives you the necessary and sufficient condition, not for ethical optimality — he was always a little slippery on that problem — but for what came to be called Pareto optimality so that there is no avoidable deadweight loss. I think I had most to learn from Abba Lerner, although I, of course, worked it out for myself. If I had had perfect teachers, they would have known the Pareto work; they would have known Enrico Barone and what you might call the fundamental theorems of welfare economics that the conditions for Pareto optimality would be exactly realized by competitive arbitrage. However, you must ask the right questions, and you must make the right distinctions. All of my teachers believed there was something to Adam Smith's invisible hand — that each person pursuing their self interest would, by some miraculous action of the invisible hand, be led to contrive the best interest of all. However, none of them could explain properly what the truth and falsity was in that position. I would say that if I had been a bright student in 1894 and read Pareto's Italian journal article, I would have understood what I now understand to be the germ of truth in the invisible hand argument. All it refers to is the avoidance of deadweight loss. Here is where my association with Abram Bergson becomes relevant.

KS: How did you come to know Bergson to begin with, and how did you collaborate with him in developing the "new" welfare economics and the concept of social welfare functions?

PS: Bergson was my contemporary in the Harvard Graduate School. He was two years ahead of me. We were both puzzled by Pareto's writings. Bergson would read to me the passage from Pareto and ask: "What do you think is being said there?" What really puzzled us was that he seems to use a singular form of what is generally an infinitely broad class. Indeed, there isn't a Pareto optimal point; there is a whole continuum, which is what makes it a necessary condition and not a sufficient condition.

I was not an independent co-author of Abram Bergson's 1938 paper published under his birth name, Abram Burk, which caused some confusion in the literature. I was a helpful midwife in helping to pull the baby out. I felt once the baby was pulled out, I had perfect clarification of the so-called "new" welfare economics.

KS: Who, in your opinion, were the most instrumental scholars in the evolution of the "new" welfare economics?

PS: The process of publishing the "new" welfare economics was not a well-organized, logical, and systematic thing at all. The names of the people who, at the minimum, would be involved include the following: Abba Lerner who, I think, is most important, John Hicks, Nicholas Kaldor, Tibor Scitovsky, Harold Hotelling, Ragnar Frisch, ... Lerner never claimed that he was discovering a new principle, but Kaldor, Hicks and others did. We should expand our list by counting in Ian Little. There was also a pupil of Hicks at Manchester, A. M. Henderson, who perceived the following question: "Suppose that there are three necessary conditions for Pareto optimality. Is it true that satisfying two out of these three conditions and not satisfying the third is always better than satisfying one of them and not satisfying the other two?" Now, if you count three apples, they are greater than two apples, and two apples are greater than one apple. It is also true that, in some sense, all of the three necessary conditions being satisfied is better than only two necessary conditions being satisfied. Yet it is not true in general that the more necessary conditions you satisfy, the better you always are.

KS: That is one of your concluding observations in Chapter VIII of the Foundations of Economic Analysis.

PS: Could have been, and Ian Little had that also.

KS: To identify the conditions for Pareto optimality is one thing, and to go beyond Pareto optimality by introducing the possibility of hypothetical compensation payments between gainers and losers, thereby expanding the reach of the Pareto principle to the situations involving interpersonal conflicts, is a different matter altogether. On reflection, what is your current verdict on the "new" welfare economics of the compensationist school?

PS: I think on the whole the "new" welfare economics of Kaldor, Hicks, Lerner and Scitovsky was overrated. In the first place, you know already you can find it in John Stuart Mill who discusses something like free trade. He in effect says that free trade may help some people, and hurt some other people, but the gainers would be able to compensate the losers. Thus, the "new" welfare economics of the compensationist school is not really that new. In the second place, there is a great ambiguity as to whether the fact that gainers would be capable of compensating the losers, yet do not actually pay compensations, has any significance.

I will give you an example. In 1959, my late wife and I made a trip to Japan at the invitation of the Japan Economic Newspaper (Nihon Keizai Shimbun). It was a wonderful trip — unbelievable. The head of the newspaper, Mr. Jiro Enjoji, took three weeks out of his busy life to travel all over Japan with us. Shigeto Tsuru and his wife were also with us. Shigeto was the simultaneous translator of my lectures which I gave in Tokyo, Nagoya, Osaka and Fukuoka.

KS: Shigeto Tsuru is your old friend from your Harvard days.

PS: That is right. During the war, Shigeto was evacuated to Japan. When he had to dispose of his books, I was the lucky recipient of his copy of the 1932 edition of Pigou's *Economics of Welfare*, which I read carefully.

At the time of our travel, Carl Christ, who was a Visiting Professor at the University of Tokyo for a year, told me that he was shocked by the rent controls in Japan. His advice was that they should be abolished. People said: "Well, yes, but it is not appropriate. There are a lot of poor people that will be very much hurt. A lot of old people will be very much hurt too." Christ said: "No problem. Just compensate them." Now, there was no chance in the world that any Japanese Diet, or any post-MacArthur occupation, would have the ability to compensate, would have the effective political desire even to do it. So, you could not pin people down as if there was something important that could be done. But nobody took seriously what could be done. Lerner always taught us about ideal lump-sum taxes. Howerver, there were very grave game-theoretical difficulties with lump-sum taxes, because the reason you ought to give people a lump-sum transfer is that they are poor, but as soon as the poor realize you are giving it to them because they are poor, they knew a blunting in their desire to work. This is a moral hazard problem. If, on the other hand, the potential compensation of the losers by the gainers remains a purely theoretical possibility, those who suffered losses remain unsalvaged. Thus, to say that lump-sum taxes could in principle solve the problem is not to say that they would actually solve it.

KS: Before turning to the core concept of the Bergson-Samuelson social welfare function and the "new" welfare economics based on it, I would like to ask you to clarify one specific point on the concept and nomenclature of Pareto optimality. From what you have described so far, I understand that Bergson and yourself had a crystal-clear idea about what came to be known as Pareto optimality. However, neither the 1938 Bergson article, nor the 1947 *Foundations of Economic Analysis*, made any explicit mention of the name of Pareto optimality. As a matter of fact, in your 1981 Bergson Festschrift article, you have written that "[t]he *necessary condition(s)* for an optimum, that such a *universal* improvement *not* be possible, Ian Little came in 1950 to call 'Pareto optimality,' a felicitous and useful coinage." May I take it that the concept of Pareto optimality was clearly grasped by Abram Bergson and Paul Samuelson, and also by Abba Lerner and John Hicks, but the nomenclature of Pareto optimality was first introduced by Ian Little?

PS: I think the person who put the word in print is indeed Ian Little. Somebody told me that he made a study and could not find the word, Pareto optimality, in the literature. I was very surprised, because from the beginning that is the way Bergson and myself talked about it.

2.4 On the Concept of the Bergson-Samuelson Social Welfare Function

KS: Let us proceed to the crucial concept of the Bergson-Samuelson social welfare function. It is presumably to go beyond Pareto optimality, and spell out the exact necessary and sufficient conditions for ethical optimality that Bergson and Samuelson introduced the extraneous ethical norm in the form of a social welfare function. Could you please clarify the motivation behind the introduction of a social welfare function? Would you also explain how this concept was conceived in the first place?

PS: You cannot obtain an ethical result without putting an ethical premise in the proposition from outside. Bergson laid out how the different forms of ethical premises could be implemented through the concept of social welfare functions, and how these different norms could reflect themselves in the results you would obtain. Of course, you could immediately understand how Pareto optimality would fit into the individualistic Bergson social welfare functions because, if you took the necessary conditions that would survive no matter how you changed the interpersonal weightings, what you would have left would be nothing other than the necessary but not sufficient conditions for Pareto optimality. That is still true only under certain circumstances; you need to rule out altruism, and you also need a kind of individualistic social welfare function of the Bergson family.[2] When you would have any one of these social welfare functions, you could write the full ethical conditions.

KS: In the provocative 1976 article devoted to the Paretian heritage, John Chipman (1976, pp.66-67 and pp.109-110) claimed that Vilfredo Pareto had already "essentially developed the concept of a social welfare function" prior to its inception by Bergson and Samuelson. What do you think of this claim?

PS: I think that Chipman attributes the concept of a social welfare function to the 1913 article of Pareto. I also seem to remember that Kenneth Arrow may have had a similar viewpoint.

KS: Yes, Arrow is in fact of that belief, which I had an opportunity to confirm.

PS: I don't want to be definite in my reaction to that query. However, I should say that as a person with great but guarded admiration for Pareto, I think he was often, at least momentarily, confused, and he was at different levels of his stages of thinking. You must remember that Pareto never had any students really. He lectured to lawyers. He had disciples, but he didn't have the advantage of people like us today, where you try out your ideas on twenty different equals. He had no equals; that made him uneven

[2] In the presence of altruism where everybody's utility function depends on the incomes of all individuals, it is clear that there are externalities which are likely to lead to Pareto inefficient allocation of resources. There are, however, special cases, which are originally suggested by Edgeworth (1881), where universal altruism does not affect the validity of the basic theorems of welfare economics. See Collard (1975; 1978, Chapter 2). See, also, Arrow (1981/1983) who shows that, excluding trivial equilibria where no voluntary redistribution of income takes place, redistribution can be Pareto optimal only in a very special case where there is only one rich giver; otherwise Pareto inefficiency is inevitable in Arrow's model. A brief yet useful overview of work in this area can be found in Hammond (1987/1995).

and a little eccentric. But, just like Joseph Schumpeter, Pareto professed great self-confidence, sureness, and disconcernment towards everybody else's ideas. Chipman argues that when Pareto introduced the word, *ophelimity*, he did it partly to get rid of various hedonistic and other connotations. But, Chipman believes when all is said and done, he had a notion of preferred cardinal utility and believed that everybody had that. Well, if that is so, it is a kind of confusion, because he gives no rational grounds for preferring one over another. Pareto's discussion on complementarity was uneven. Mathematicians must be very exact, but he was using the sign of the cross derivatives of cardinal utility. You know, the moment you transform cardinal utility, you can change the sign of the cross derivatives.

Let me connect this up with the social welfare function. I had to read Pareto in the Italian original, and my command of Italian was very poor. Nevertheless, I had a feeling when I read the 1913 article — I say this with diffidence; I don't have any confidence — that he may momentarily have had the notion of an imposed-from-outside social welfare function which itself would not be different from Bergson's one. I don't think that subtracts anything from Bergson's originality. But I thought I detected in it a real political function of certain elites in any society. Each one of these elites has different power, like the powers of father and mother, oldest son, younger sons in a family. If you try to get a demand function for the family, you must combine these different influences. Generally speaking, when you do that, you don't get an integrable function. To me, that was what Pareto was talking about in the 1913 article.

The same puzzle comes about in my 1956 *Quarterly Journal of Economics* article on social indifference curves. A key concept in this article is that of the "just" society. It is the society in which, somehow in the background, lump-sum payments have been made so as to keep maximizing a collective (Bergson) social welfare function. Of course, it is just a thought experiment. It would be extremely hard in any experimental situation to get information and to do it. When Gary Becker tried to write on the economics of families, he kind of took over that notion. He somehow thought that there really exists conceptually such an architypical family of social indifference curves. I think it is extremely unrealistic; I am not sure that Pareto, who by 1913 was deeply in sociology, would have agreed with Becker. He regarded sociology as everything that included more than economics, including very contradictory items.

Thus, it could be that I could see places in which Pareto had a concept very much like the Bergson social welfare function. But I think there are other logically distinguishable notions in his discussion. The problems have been made more complicated by the fact that Pareto liked to use little deltas and equate them, which I never liked. You can't be sure what Pareto meant by his infinitesimals. I don't believe that he was above reproach with respect to confusing and even being himself confused as if he knew what he was saying.

That is all I can say on the problem which you posed.[3]

[3]In an early response to Chipman (1976), Samuelson (1987, p.177) made an almost sarcastic remark on Chipman's assertion to the following effect: "This, I believe, involves an act of sympathetic charity since Pareto's many writings are often obscure on what we now call Pareto optimality, and since expressions such as $\theta_1(\delta U^1) + \theta_2(\delta U^2) + \cdots$ are sometimes used by Pareto as positivistic-politics constructs and sometimes as vague Lagrange multiplier expressions relevant to the first-order conditions for being on the ("Pareto-optimal" points of the) utility-possibility frontier". Subsequently,

2.5 On the Concept of the Arrow Social Welfare Function

KS: Soon after the publication of Kenneth Arrow's *Social Choice and Individual Values*, Ian Little, James Buchanan, and Abram Bergson, respectively, published a harsh conceptual and substantive criticism against Arrow's use of the concept of a social welfare function and his general impossibility theorem. To the best of my knowledge, your own published criticism on Arrow's social welfare function and general impossibility theorem appeared in the 1967 article entitled "Arrow's Mathematical Politics." In this article, you exported Arrow from economics to politics with a remark that Arrow's general impossibility theorem is a seminal contribution to the infant discipline of mathematical politics, but it has nothing to do with welfare economics.

Would you please recollect what was your first response to Arrow's social welfare function and his general impossibility theorem?

PS: From the beginning, I thought it unfortunate that Arrow used the terminology of welfare economics when he was in fact making a path-breaking contribution to the emerging discipline of mathematical politics. I read your interview with him with great interest. I am a great admirer of Kenneth Arrow. I consider him as one of the greatest economists of our time. I think that one of the biggest mistakes that Stockholm ever made was to give him a half of the Novel Prize. There are two mistakes at the same time. They gave Hicks only a half of the prize; they should have given him the full prize. Maybe they should have given Arrow two prizes, one for his contributions to general equilibrium theory, and another for his work in probability and information, which is quite different.

It is interesting to read Arrow's recollection of how he went about the problem of social choice, which agrees a little with my impressions, my imperfect memories. In the summer of 1948, Olaf Helmer, a logician at the Rand Corporation, was trying to develop game theory as a tool for the analysis of international relations and military conflict. He told Arrow that he was troubled by the foundations of this application of game theory. When applied to international relations, the players were countries, not individuals. In what sense, Helmer asked, could collectivities be said to have utility functions? Arrow immediately replied that this question had been answered by Bergson's notion of social welfare functions and he tried to give Helmer a brief exposition. It resulted in his discovery of the general impossibility theorem. Now, I think he went into mud, looking for a pearl, and came out with a diamond. It was a very important finding in political science as it showed that the failure of specific voting functions is not due to any lack of cleverness, but is a reflection of general impossibility. However, it had nothing to do with ethics and welfare economics. Arrow's use of "social welfare function" for his "voting function" was unfortunate.

KS: Were you in general agreement with Ian Little and Abram Bergson in their criticisms?

PS: The moment Arrow's book came out, and maybe the moment his article came out in the *Journal of Political Economy* earlier, independently and at least in three

Bergson (1983, p.44) basically concurred with this verdict when he concluded that "it still seems difficult to quarrel with Samuelson's $\cdots$ assessment of Chipman's perception."

different minds — Ian Little's mind, my mind, and Abram Bergson's mind —, there came a realization that Arrow was not talking about the same thing.

KS: By the "same thing" you mean the social welfare function ... .

PS: That's right. Arrow's general impossibility theorem does not disprove the existence of the Bergsonian social welfare function, neither does it disprove the existence of the Benthamite hedonistic function. As I said, I am a great admirer of Kenneth Arrow, and there are only two things I have ever disagreed with in his writings. One, not very important, difference is that, in axiomatizing the von Neumann-Savage utility system for gambling, he believes that you ought to make utility bounded. This is to avoid the St. Petersburg paradox. I beg to differ, because I think that the St. Petersburg paradox is only a classroom paradox. It is a purely contrived infinity. I don't think I have ever succeeded in pursuading Arrow on this. Another, this time important, difference is his usage of the concept of a social welfare function. When he brought out his new edition, he must have known the objection of Bergson; he must have known the objection of Little; and I think he certainly knew of the objection by me. As far as I know, however, he just paid no attention to them. I have never heard of Arrow saying that it was a linguistically unfortunate abuse of those three words — the same three words. I think he was sort of fixing his right to have done it.[4]

[4] For the sake of setting the record straight, two lengthy remarks on the literature may be in order at this juncture.

In the first place, it seems fair to cite two of Arrow's actual writings on the concept of a social welfare function. On the one hand, in "Notes on the Theory of Social Choice, 1963", which Arrow appended to the second edition of Social Choice and Individual Values, he wrote as follows: "It would perhaps have been better for me to use a different term from 'social welfare function' for the process of determining a social ordering or choice function from individual orderings, although the difference between Bergson's definition and my own was pretty carefully spelled out ... . I will therefore now use the term 'constitution,' as suggested by Kemp and Asimakoplos. The difference, however, is largely terminological; to have a social welfare function in Bergson's sense, there must be a constitution [Arrow (1963, pp.104-105)]." On the other hand, in his contribution to the book edited in honour of Samuelson, Paul Samuelson and Modern Economic Theory, Arrow referred to a passage from Samuelson's 1981 Bergson Festschrift article, "Bergsonian Welfare Economics," and firmly asserted as follows: "[I]f there are 'rumors that Kenneth Arrow's Impossibility Theorem rendered Bergson's "social welfare function" somehow non-existent or self-contradictory,' they are indeed 'quite confused' [Arrow (1983, p.21)]." To substantiate this statement, Arrow observed that the Pareto quasi-ordering corresponding to each and every profile of individual preference orderings can be extended into a complete ordering by virtue of Szpilrajn's classical extension theorem. Thus, it seems fair to say that the conceptual difference and interrelationship between the Bergson social welfare function and the Arrow social welfare function are by now well recognized by Arrow and whole profession. It may also be asserted that a wide recognition exists by now that Arrow's general impossibility theorem does not disprove the existence of the Bergson social welfare function; it is a theorem on the non-existence of the Arrow social welfare function, or constitution, and not on the non-existence of the Bergson social welfare function.

In the second place, although Bergson and Samuelson are in complete agreement on the conceptual distinction between the Bergson-Samuelson social welfare function and the Arrow social welfare function, as well as on the irrelevance of the Arrow impossibility theorem to welfare economics, there are at least two junctures where they seem to have chosen somewhat different directions. On the one hand, there is no room for compromise whatsoever in Samuelson's purge of the Arrow impossibility theorem from the territory of welfare economics. In contrast, Bergson seems to have taken a somewhat more flexible stance in this arena. It is true that Bergson (1954, p.240) began his examination of "Arrow's Theorem in Relation to Welfare Economics" by declaring that "[i]n my opinion, Arrow's theorem is unrelated to welfare economics." However, he was careful enough to note

KS: What did you think about Buchanan's criticism of Arrow to the effect that the Arrovian social welfare function, or constitution, which hinges squarely on the concept of **collective rationality**, is nothing other than a category mistake?

PS: Would you remind me of Buchanan's criticism of Arrow? If you spell it out simply, I will generate a reaction to it.

KS: Let me try. Arrow's general impossibility theorem depends on the assumption of collective rationality to the effect that the **social choice** is made in accordance with the maximization of an underlying **social preference ordering**, which is constructed on the basis of the profile of individual preference orderings through some process or rule, within the given social opportunity set. In his 1954 **Journal of Political Economy** article, James Buchanan criticised Arrow for his use of the assumption of collective rationality in the above sense by asserting that it was an illegitimate transplantation of a property of individuals only: "The mere introduction of the idea of social rationality suggests the fundamental philosophical issues involved. Rationality or irrationality as an attribute of the social group implies the imputation to the group of an organic existence apart from that of its individual components. ... We may adopt the philosophical bases of individualism in which the individual is the only entity possessing ends or values. In this case no question of social or collective rationality may be raised. A social value scale simply does not exist. Alternatively, we may adopt some variant of the organic philosophical assumption in which the collectivity is an independent entity possessing its own value ordering. It is legitimate to test the rationality or irrationality of this entity only against this value ordering."

PS: My own views about ethics are, generally speaking, against a narrow and special view. Hearing your summary of Buchanan's criticism, I don't at all agree with his position. It boils down to the claim that, if it is a social choice in an individualistic

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that there is a conception of the concern of welfare economics which allows a different interpretation of the Arrow impossibility theorem: "According to this view, the problem is to counsel not citizens generally but public officials. Furthermore, the values to be taken as data are not those which might guide the official if he were a private citizen. The official is envisaged instead as more or less neutral ethically. His one aim in life is to implement the values of other citizens as given by some rule of collective decision-making. Arrow's theorem apparently contributes to this sort of welfare economics ... [Bergson (1954, p.242)]." It is worthwhile to point out that Arrow (1963, p.107) fully endorsed this view of welfare economics which Bergson aptly identified. On the other hand, Samuelson (1947, p.221) admits no reason whatsoever to be concerned with the origin and/or nature of the values captured by the social welfare function: "Without inquiring into its origins, we take as a starting point for our discussion a function of all the economic magnitudes of a system which is supposed to characterize some ethical belief — that of a benevolent despot, or a complete egoist, or 'all men of good will,' a misanthrope, the state, race, or group mind, God, etc. Any possible opinion is admissible, including my own, although it is best in the first instance, in view of human frailty where one's own beliefs are involved, to omit the latter. We only require that the belief be such as to admit of an unequivocal answer as to whether one configuration of the economic system is 'better' or 'worse' than any other or 'indifferent,' and that these relationships are transitive ... ." In contrast, Bergson (1976, p.186) is ready to be concerned with the nature of the values to be captured by the social welfare function: "The practitioner of welfare economics is in principle free to take any values as a point of departure, but the resulting counsel as to economic policy is not apt to be too relevant unless the values in question are held by, or can plausibly be imputed to, one or more officials concerned with the policies in question. Should the practitioner for any reason disapprove of those values, he may, of course, refrain from offering the officials any counsel at all."

society that is being analysed, then you should not be interested in any degree of rationality, consistency, or transitivity at the social level. This would be like an answer from fallacy. It seems to be a Humpty-Dumptyism. Humpty-Dumpty says: "If I say a thing twice, then it is true." I see no reason to think that there is any cogent force in Buchanans argument. What he says boils down to the statement: I, Buchanan, have no interest in that." He gives no reason why other reasonable men should go along with him. I think those were blinders of his own creation.

KS: I understand that you firmly retain your previous verdict that Arrow's contribution to social choice theory is not relevant to welfare economics. What, then, is your current opinion on the scientific status of social choice theory in general, and Arrow's general impossibility theorem in particular?

PS: I regard social choice theory in the narrow sense as orthogonal to welfare economics. It can be a part of positivistic study of voting systems. I like the title of your journal, Social Choice and Welfare, but by connecting social choice theory with welfare economics, Arrow seems to have created much of the unfortunate confusions. Indeed, social welfare can be completely congruent with the pre-Arrow literature on welfare economics and moral philosophy. Arrow wanted to find out how an individualistic Bergson-Samuelson social welfare function could be generated democratically. But I should register a difference in opinion here.

Arrow has said more than once that any theory of ethics boils down to how the individuals involved feel about ethics. I strongly disagree. I think every one of us as individuals knows that our orderings are imperfect. They are inconsistent; they are changeable; they come back. We go out at night and we leave our wallet at home, because we don't trust ourselves, and we are right not to trust ourselves. We do things and say, "I am going to hate myself in the morning" and, in the morning, we do hate ourselves. There are no ideal individuals who, as adults, suddenly become these perfect individuals. People talk about paternalism as if we were bowing down to a dictator, but it is wrong in ethics to rule out imposition, and even dictatorship, because that is the essence of ethics. Take, for example, the simple axiom of unanimity and suppose that people are self destructive ethically. The notion that every ethical system will have to recognize a unanimous agreement by people is like encouraging bad children to be bad children. I am serious in my belief that difference between a child and an adult is only a difference of degree. In the old paintings, the children are little adults; in modern paintings, if you did them right, the adults are only badder or older children. We are all imperfect. This is not a doctrine of the original sin; it is a doctrine of the imperfectability of mankind. It is too presumptuous to suppose that individuals are consistent, transitive and meaningfully unchangeable in their views. By the way, Piero Sraffa never believed in modern demand theory at all and tried to do everything with cost, because he believed people are changing all the time.

I would say that the ruling theme among economists since 1750 goes something like this. There is a vague notion, which could not be written up for a classroom examination, that there is something optimal about laissez-faire pricing. Among the most sophisticated lay people, it is realized that laissez-faire pricing systematically makes some people better off and some other people worse off, and this pattern quickly changes. There is a chivalrous rule of thumb: "Don't interfere with it." In the first place, if you do interfere with it, you probably do as much ethical harm as good because of imperfect government. But, more than that, there is the law of large numbers operating. One invention helps A, another invention helps B; by James Bernoulli's theorem of large numbers, it evens out. The trickle down theory from inequality is bred by the Schumpeterian dynamic process of innovation. The total pie is improved; on the whole and over time, it lifts up everybody. The same tide raises all ships. That is dogmatic faith, but I think it is in the background of intelligent conservatives. John Hicks certainly. His implicit faith is that it will even out. In terms of economic history, there is a lot of truth in that faith. This is a kind of common sense ethics, and most people don't want to go into the complicated questions, I think. I don't know whether most people should.

2.6 On the Single Profile Impossibility Theorems

KS: Ian Little and yourself emphasized that the Bergson-Samuelson social welfare function is defined for any fixed profile of individual preference orderings characterizing the given society. In contrast, Arrow's social welfare function, or constitution, is a "process or rule" assigning a social welfare ordering to each and every logically possible profile of individual preference orderings. Your 1967 article on "Arrow's Mathematical Politics" has identified this sharp contrast between the Bergson-Samuelson single-profile framework and the Arrow multiple profile framework to be the primary logical culprit for the Arrow impossibility theorem. As a response to your charge against the multiple profile framework of the Arrovian social choice theory, many single profile counterparts of the Arrow impossibility theorem have been presented by Murray Kemp and Yew-Kwan Ng (1976), Robert Parks (1976), Robert Pollak (1979), Kevin Roberts (1980), Amartya Sen (1993), and many others. Would you please recapitulate your verdicts on the status of Arrovian impossibility theorems in view of these single profile general impossibility theorems?

PS: I don't know of any important single-profile impossibility theorem. Ian Little has recently published his collected papers, *Collections and Recollections*, in which he commented on his famous criticism of Arrow published in the 1952 *Journal of Political Economy* as follows: "[O]ne of the main points made was that Arrow's famous book ... had no bearing on traditional welfare economics. One of the reasons given was that the conditions required of a satisfactory 'social welfare function' (SWF) were stated in terms of changes in individual ordering, whereas the *locus classicus* of a SWF [viz., Bergson (1938)] stated it for a given set of orderings. It seems that too much was made of this, in that it has been subsequently shown [in Kemp and Ng (1976)] that a very similar impossibility theorem can be proved for a given set of orderings [Little (1999, pp.17-18)]." I wrote to him and said: "You weren't wrong, but maybe just confused."

Take, for example, a single-profile impossibility theorem à la Kemp and Ng (1976), which hinges squarely on their Axiom 3. I wrote in my published response to them: "I must regard Axiom 3 of Kemp-Ng as anything but 'reasonable' to impose on a Bergson-Samuelson Individualistic Social Welfare Function ... . As Oscar Wilde might put it, "For any ethical observer to understand Axiom 3 is to reject it [Samuelson

(1977a, p.81)].”[5]

KS: What about Amartya Sen's **Impossibility of a Paretian Liberal**, which is another example of a single-profile impossibility theorem without taking any recourse to the Kemp-Ng Axiom 3, or anything like that?

PS: You should clarify to me why Sen is supposed to have made an interesting and important case against a Paretian liberal. I see no case against Pareto other than that he is discussing, at best, certain necessary conditions. By enumerating all of his necessary conditions you would not have arrived at any solution to an ethical problem. Did Sen say anything more than that?

KS: Let me try. One of the axioms in Arrovian social choice theory, which has been left almost unchallenged in the literature, is the Pareto principle to the effect that unanimous preferences among individuals for a social state **x** against another social state **y** is to be faithfully embodied in the social preference for **x** against **y**. Sen posed a serious criticism against this ubiquitous acceptance of the Pareto principle. He did this in terms of an intuitive example involving an individual's libertarian right to read a book in his/her private room or not without outside interference, which Sen elaborated into a simple yet powerful impossibility theorem on the Paretian liberal.[6] In conspicuous contrast with Arrovian impossibility theorems, which hinge squarely on the multiple-profile framework à la Arrow, Sen's impossibility theorem invoked only a single profile of individual preference orderings. Another contrast to be noticed is that Sen's impossibility theorem depend neither on the axiom of collective

[5] Let us recapitulate Samuelson's criticism on Axiom 3 of Kemp and Ng more in detail.

> Suppose society has a fixed total number of chocolates that could be partitioned between two specified selfish hedonists: say, 80 and 20, 50 and 50, 20 and 80, or more generally as any of two non-negative real variables (X chocolates to Person 1 or x chocolates to Person 2), where $X + x = 100$ and neither is negative. ... What is the meaning of the new Axiom 3 in this context? It says, "If it is ethically better to take something (say 1 chocolate or, alternatively, say 50 chocolates) from Person 1 who had **all** the chocolates in order to give to Person 2 who had none, then it **must** be ethically preferable to give **all** the chocolates to Person 2." One need not be a doctrinaire egalitarian to be speechless at this requirement. Is it "reasonable" to put on an ethical system such a straightjacket? Few will agree that it is [Samuelson (1977a, p.83)].

It seems to me that the forcefulness of this criticism originates in the fact that we are informed of the material background of the following preference orderings of Person 1 and Person 2:

Person 1: (100, 0), (100 - ϵ, ϵ), (0, 100)
Person 2: (0, 100), (100 - ϵ, ϵ), (100, 0)

where ϵ is a small positive number. If the informational basis of social welfare judgements is limited only to the profile of (ordinal) individual utilities and we are deprived of whatever non-welfare information about the social alternatives, the Kemp-Ng Axiom 3 may not be that easy to shoot down. It is in this sense that the Kemp-Ng Axiom 3 is said to be a counterpart in their single-profile framework of Arrow's Axiom of "Independence of Irrelevant Alternatives" in his multiple-profile framework. Therefore, what is to blame may not be the Kemp-Ng Axiom 3 **per se**, but the narrow informational basis of ordinal welfarism.

[6] There is a debate in the literature concerning the legitimate articulation of individual rights in the conceptual framework of social choice theory. As this debate has very little to do with the present issue of the ubiquitous applicability of the Pareto principle, we have only to refer those who are interested in this debate to Gaertner, Pattanaik and Suzumura (1992), Gärdenfors (1981), Sen (1992), Sugden (1985) and Suzumura (1996; 2004).

rationality, nor on the axiom of independence of irrelevant alternatives, which are another important constituents of Arrow's impossibility theorem.

PS: Most of what Amartya Sen is developing as social choice theory in the wider sense has almost nothing to do with Arrovian impossibility theorems, neither does it have any relevance to the structure of voting systems. If he wants to pour liberty along with tea and coffee into the Bergson social welfare function, that is perfectly admissible, and one can study its logical consequences. Of course, you have to invent an operationally meaningful definition of liberty.

2.7 On Consequentialism and Welfarism

KS: Our discussion on Sen's impossibility theorem is a convenient step towards further examination of the informational basis of social choice theory and welfare economics. As Arrow (1987, p.124) has aptly observed, "[i]t has been taken for granted in virtually all economic policy discussions since the time of Adam Smith, if not before, that alternative policies should be judged on the basis of their consequences for individuals." As a matter of fact, most of the contemporary welfare economics is based not just on *consequentialism* in this sense; it is based on *welfarist-consequentialism*, or *welfarism* for short, in the sense that consequences are evaluated solely on the basis of utilities entertained by individuals from these consequences.[7] To the best of my knowledge, it was John Hicks (1959) who first declared in "Preface — and a Manifest" in his *Essays in World Economics* that welfarism is too narrow as the informational basis of welfare economics for it to serve the enhancement of human well-being. It was in his farewell to the traditional informational basis of welfare economics that he coined the term, *economic welfarism*:

> The view which, now, I do *not* hold I propose (with every apology) to call 'Economic Welfarism': for it is one of the tendencies which has taken its origin from that great and immensely influential work, the *Economics of Welfare* of Pigou. ... The line between Economic Welfarism and its opposite is not concerned with what economists call utilities; it is concerned with the transition from Utility to the more general good, Welfare (if we like) itself [Hicks (1959, pp.viii-ix)].

Hicks was led to dissociate himself from Economic Welfarism, because he came to believe that "[i]t is impossible to make 'economic' proposals that do not have 'non-economic aspects', as the Welfarist would call them; when the economist makes a recommendation, he is responsible for it in the round; all aspects of that recommendation, whether he chooses to label them economic or not, are his concern [Hicks (1959, pp.x-xi)]." However, Hicks was surely not ready to jump to the other polar extreme:

> I have ... no intention, in abandoning Economic Welfarism, of falling into the 'fiat libertas, ruat caelum' which some later-day liberals seem to see

[7] According to Sen (1979, p.538), welfarism just represents an informational constraint to the following effect: "Social welfare is a function of personal utility levels, so that any two social states must be ranked entirely on the basis of personal utilities in the respective states (irrespective of the non-utility features of the states)."

> as the only alternative. What I do maintain is that the liberal goods are goods; that they are values which, however, must be weighed up against other values. The freedom and the justice that are possible of attainment are not the same in all societies, at all times, and in all places; they are themselves conditioned by external environment, and (in the short period at least) by what has occured in the past. Yet we can recognize these limitations, and still feel that these ends are worthier ends than those which are represented in a production index. It is better to think of economic activity as means to these ends, than as means to different ends, which are entirely its own [Hicks (1959, p.xiv)].

Both Abram Bergson and yourself were careful enough to avoid premature commitment to welfarism in your initial exposition of the concept of a social welfare function. However, your famous Chapter VIII in the **Foundations of Economic Analysis** on welfare economics has a passage where an explicitly welfaristic formulation of social welfare function is presented. To be more specific, in p.228 of the **Foundations**, we encounter the expression for social welfare W as a function of the profile of individual utilities: $\mathsf{W} = \mathsf{F}(\mathsf{U}^1, \mathsf{U}^2, ...)$. It is this formulation which is often cited, e. g. by Sen (1979), as a sure-fire proof that a social welfare function à la Bergson and Samuelson is unambiguously welfaristic in nature.[8] Would you please tell me whether you regard yourself as a welfarist in your own social welfare function?

PS: My view would be as wide as possible. In the sense that Hicks and Sen used the term, I am **not** a welfarist; the expression cited by Sen is just an example of the possible class of social welfare functions, which happens to be welfaristic. Consistent with Hicks' manifest, my own social welfare function will have a large room to accommodate freedom, liberty and rights.

By the way, Milton Friedman is not a consequentialist, who neither wants there to be more bread, nor particularly cares whether that bread is equally distributed among people. He wants there to be liberty. He would be disappointed if, by non-liberty, a rational collective state could create prosperity. He does not believe it would be possible, but he would be disappointed if it should happen to be the case. I am not that extreme non-consequentialist; if people do want liberty, I would ask how much they are willing to pay in terms of sacrifice with bread. Milton Friedman thinks that liberty is something that belongs to him, and somebody else is taking it away from him. He thinks that liberty is something that can be treated algebraically, and scaled to get more quantities. You get more of the good stuff in it. I am a more cautious

[8] Likewise, we find a passage in Bergson (1948, p.418), which reads as follows:

> If the decision is in favour of consumers' sovereignty, the welfare function may be expressed in the form,
>
> (1) $W = F(U^1, U^2, U^3, ...)$.
>
> Here U^1, U^2, U^3, etc., represent the utilities of the individual households as they see them and W, the welfare of the community, is understood to be an increasing function of these utilities. The welfare of the community, then, is constant, increases or decreases, according to whether the utilities of the individual households are constant, increase or decrease.

libertarian. There is an old saying. A man is walking down St. James Street in London, swinging a cane into a curve. An old passerby speaks to him: “Hey, white bear, you are swinging your cane.” The guy replies: “It’s a free country, isn’t it?” The old passerby retorts: “Your freedom ends where my nose begins.” But the old man is wrong; the white bear’s freedom ends long before his nose begins. One man’s right to privacy is another man’s condemnation to loneliness. I don’t say that in order to make ethics of liberty simple; I say that in order to make it realistic, because it is not simple.

Let me also tell you my personal experiment at the University of Chicago as a little hobby. I was curious. Are economic libertarians, who are against exchange controls, against price controls, and against rationing, also zealous Voltairean believers in freedom of opinion, the expression of opinion, like John Stuart Mill? Therefore, I observed the behavior of my friends who might be thought to be strong economic libertarians to see whether they were also strong political libertarians. Quite to the contrary. I asked Milton Friedman, in a quiet non-confrontational way so that he had known I was studying his behavior. The question was about Paul Sweezy, who was invited by a leftist philosophy teacher to the University of New Hampshire to talk to his class. He was subsequently brought up before the New Hampshire legislature to testify on what he talked about. He refused to do both. I asked Milton Friedman: “Do you think he should have been required to do that?” Friedman replied: “Of course! Public money is running the University.” I asked further: “You mean, it would be different if it was Dartmouth College, a private school?” He said: “Well, a wise and honest man should be willing to admit what he said.” I said: “You don’t understand. Everybody knows what he said. The meaning of this is not to learn new information. It is to bring out the despicable fact that he spoke, let us say, in favor of the Soviet Union.” Milton Friedman had no sympathy for Paul Sweezy. The only exception I found was Fritz Machlup. I mentioned this to my late colleague, Evsey Domar, who was a colleague of Fritz Machlup at Johns Hopkins University. He said: “Oh, that is nothing. He is in love with professors.” I said: “I don’t care. I just want to get the barebone fact by whatever reasons.”

I think those who were the most derogatory in what they think of the narrow welfarism exaggerate what most people feel. If you want to find out who are the happiest people in the world, it is very difficult to do because of the way you ask the question, and the way your question is answered. I heard at a private dining club the philosopher, Sissela Bok, who is the daughter of Gunnar Myrdal but has a very different personality from her father. She was making a study of what people say they are the happiest. It turns out that it is people in Finland, Sweden and Holland, not people in Africa, not people in Indonesia. We used to think of those Northern countries as having a lot of suicide; they kept more honest records than Catholic countries. Why are they happy? They are happy because they have three good meals and a good medical care. They are falling behind us a little bit in the sweepstakes of growth from 1970 to the present time, but for a hundred years they worked for a very slow, very cold and unproductive society mostly through education. I think the lip services people give to the non-economic objectives turn out to mean very little to them when they cost a lot in economic terms. Along with liberty come the unintended consequences of liberty. Spain after Franco’s day is a very nice free country, but I was told by an accompanying government official that “in Franco’s day, we could take the subway to the office where we are going, but I really don't advise two middle class people in the middle of the day to use the Madrid subway." The Soviet Union freed from Stalin's tyranny has a lot of chaos including mafia chaos.

2.8 On the Resurgence of Consumers' Surplus

KS: In a famous section, "Why Consumer's Surplus is Superfluous," in the *Foundations of Economic Analysis*, you raised a famous and devastating criticism against the Marshallian concept of consumer's surplus, which started as follows [Samuelson (1947, p.195)]: "[A]ny judgment as to the usefulness or lack of usefulness of consumer's surplus has nothing to do with the problem of the admissibility of welfare economics as a significant part of economic theory since nobody has ever argued that the latter subject presupposes the validity of consumer's surplus. Can it then be said that consumer's surplus if not necessary, is nevertheless a useful construct?" Answering this question of your own strongly in the negative, you concluded as follows: "It is for these reasons that my ideal *Principles* would not include consumer's surplus in the chapter on welfare economics except possibly in a footnote, although in my perfect *Primer* the concept might have a limited place, provided its antidote and alternatives were included close at hand [Samuelson (1947, p.195)]." Not many economists were bold enough to challenge your sweeping and definitive criticism, yet we may find in Max Corden's *Theory of Protection* the following passage:

> [T]he reader might recall the story of consumers' surplus. Here was a simple intuitively appealing idea, discovered by Dupuit, rediscovered and developed by Marshall, revived by Hicks, and obviously useful. Upon careful examination it turned out to require many assumptions for its validity, and to have several possible meanings. The purists convinced themselves it was unnecessary for dealing with any relevant problem. It was a 'totally useless theoretical toy'. Officially, one might say, it died. And yet it would not stay in the grave. It has such a strong intuitive appeal, and there is nothing better available, so people keep on measuring it. ... One suspects that the perfectionist theorists gave up too quickly [Corden (1971, pp.242-243)].

We should also mention the frequent use made in recent years of the concept of consumer's surplus in the theory of international trade as well as theoretical industrial organization. Would you please comment on these rebuttals, and elaborate your verdict on the use and usefulness of the concept of consumer's surplus?

PS: It is a very treacherous concept. The correct thing is to look at the indifference curves. It is much clearer in the indifference curve space, and it is even clearer when you do it for Peter alone than when you do it for Peter and Paul together. When you merge Peter and Paul in an aggregate demand curve, and you start taking areas under the aggregate demand curve, in the first place, it is technically wrong — these triangles do not measure anything you want to measure when the marginal utility of money is an endogenous variable. From the very beginning, this was the criticism of Marshall by many different people. There was a letter from John Neville Keynes to Marshall, in which he wrote: "You are going to be in a trouble on this and you know it is not right. What you pay for the first unit if you are buying only one unit is different from what happens if you are buying others." John Hicks wrote articles on the compensated demand curve and Milton Friedman argued, in a particularly silly article published in the *Journal of Political Economy*, that Marshall had compensated demand curve. He just did not understand the language which had been used in those days. Arnold Harberger, Chicago's leading applied economist during his time, tried to measure the consumers' surplus triangle. His dogma was that a square inch of area is a square inch of area; you don't have to worry about poor people or rich people; you can aggregate the jelly of Peter with the jelly of Paul, and you have got jelly. Now, what Marshall says is something a little more careful. He says: "Most things affect all classes equally." In other words, they all even out. That goes back to what I said is the underlying principle of most economists of all ages. If you do the thing that increases the size of the pie, it will trickle down, which is the law of large numbers. One time it will hurt one group, and another time it will hurt another group. I am sure that Joseph Schumpeter believed in something like that, and the widespread use of the Marshallian consumers' surplus hinges squarely on such a belief to be widely shared.[9]

2.9 Welfare Economics and Economic Policy

KS: In your 1981 Bergson Festschrift article, you wrote on the role of competition as follows: "[The] Pareto-optimality property of competitive equilibrium is no theoretical argument for laissez-faire, and is in many situations no cogent practical argument for favouring the use of competition." This interesting observation leads us to a series of questions. In the first place, what, in your opinion, is the main message of the basic theorems of welfare economics? In the second place, what, in your opinion, is the theoretical basis for favouring the use of competition in the allocation of resources? To put it slightly differently, what, in your opinion, is the theoretical foundation of competition policy?

PS: All of the glories of competition are only appropriate when you have constant returns to scale, or when you have replicability so that the lumpiness involving fixed cost gets replicated innumerable times and you have what I wrote in the Chamberlin Festschrift article [Samuelson (1967b)], capitalizing on Joseph's article in 1933.[10] It is true that people frequently refer to the fundamental theorem of welfare economics as a support for promoting competition, but that is a mistake. Someone like Milton Friedman does not understand that it is only under a very special institutional condition that you can play the game of competition and get the results of playing the game. As soon as you have fixed cost, you have a public good problem.

[9] Among many post-Marshallian literature on the concept of consumer's surplus, those who are interested should start their reading with Willig (1976) and Hausman (1981), which present rather contrasting messages with each other.

[10] It was Joseph's (1933) pioneering work that showed how U-shaped cost curves, belonging to replicable plants or to replicable firms under free entry, leads asymptotically to a horizontal unit cost curve for the industry and multiplant firms. Capitalizing on this seminal result, Samuelson (1967b) showed that the possibility of replication leads to "asymptotic-first-degree homogeneity" of the production function.

KS: What is your view on the practical use of welfare economics? To what extent can welfare economics serve as the theoretical foundations of economic policy?

PS: What a lot of welfare economics of my own writing and my own time had been trying is to rule out certain situations as almost universally conceivable as Pareto sub-optimal. Most of my generation have believed that it is better to be on a contract curve than to be off the contract curve. Who won't be for that belief? If your only choice is a point off the contract curve, and you are offered a point on the contract curve which is inside the lense-shaped area enclosed by the two indifference curves passing through the initial point, then you would agree to accept that offer. However, you don't know when you come into negotiation if you are going to end up inside the area enclosed by the two indifference curves in question. This is what is essentially wrong about Ronald Coase. The Chicago School was just delighted when Coase came along and told them: "All you have to do is to set property rights; then no deadweight loss whatever occurs." What they never asked was: "Why should anyone agree to a new situation with property rights, unless they knew their own possession would be as good as, or better than, the status quo?" Under general property rights, the people having property rights end up better off, but people who are excluded end up worse off. The best argument that could be made would be that there should be enough extra gain, and the gainers could bribe the losers. But this argument involves begging the question, as it presupposes that something is correct about the status quo.

My 1974 article entitled "Is the Rent-Collector Worthy of His Full Hire?" put forward an interesting theorem, which was also proved independently by Martin Weitzman (1974), and Jon Cohen and Martin Weitzman (1975), to the following effect. Consider the famous "problem of the common" under general diminishing returns and static conditions, where the free access equilibrium is inefficient whereas private ownership equilibrium is efficient. However, the variable factor (labor) will always be better off with inefficient free access rights rather than under efficient private property rights. If somebody says that there is no content of welfare economics with policy relevance, here is an example of something that is not obvious before you actually analyze it. As I concluded my 1974 article, "Pareto-optimality is never enough [Samuelson (1974, p.10)]."

Another case in point is my article in the Festschrift for Margaret Hall, which proved that things get worse before they get better. It is the same set-up as the first case, but now you take half of the common and you make it enclosed, which means that you have private property. On that half, the marginal productivities of variable factors are equalized; on the other half, the average productivities of variable factors are equalized. The naive pre-1935 writer would say: "Surely, it is better to get half of the Pareto optimality conditions in real life." But it is not. Among the three possible situations, viz., the pre-enclosed common (the situation A), the completely enclosed common (the situation B) and something in between (the situation C), the middle is worse than the either end. There are a lot of suggestions in this little theorem of policy relevance. It suggests why a lot of good improvements don't get done. The same thing applies to the Darwinian evolution. If you can make the big leap, and have feet, then you can get out of the ocean and occupy the land. How can you, by little changes, ever make it worthwhile to make the big change? Of course, the true evolutionist knows there is no mind involved, and it is just a process. There is no selfish gene which is consciously doing this or doing that.

I should also mention to Joseph Schumpeter in this context. He spoke repeatedly of the Ricardian vice to the effect that the trouble with Ricardo was that he had too much interest in policy; poor Keynes would have been a better economist than he was if he had been free from the Ricardian vice. I should say people who live in glass houses should not throw stones. Schumpeter, who professed not to give advice, gave me advice all the time. His political thought was very close to my view and Pareto's view, although it was arrived at independently of Pareto. Schumpeter had contempt for the middle classes, because they didn't stand up for their Victorian liberties. He himself wasn't free of the Ricardian vice, which affected his otherwise good work. He was terrible on the Great Depression. He said that it was a good thing when 25% of the population was unemployed, a million homes were in foreclosure, and 10 to 15 thousand banks shut their doors with no payments to the depositors. One of the uses of welfare economics is to teach you to be alert to study how our ethical beliefs interact with it, and how they contaminate our analytical writings and viewpoints. Pareto who was contemptuous of political viewpoints interfering with economics was the most opinionated man possible. In fact, in the last part of his argument, he analysed those things but chose to call them sociology, not economics.

3 Concluding Remarks

Paul Samuelson is an almost inexhaustible source of first-hand information on the historical evolution of normative economics. Thanks to his generosity, this interview could cover many aspects of welfare economics, "old" and "new", as well as social choice theory, with many fresh testimonies which would prove revealing especially to those who are relatively new in the field. Yet there are many aspects of Samuelson's contributions to normative economics, to which this interview could not do full justice, including, among others, his monumental work on gains from free trade, his path-breaking work on intertemporal efficiency and turnpike theorems, his pioneering work on overlapping generations economies, to say nothing of his vastly influential work on public goods. Another round of interview with Paul Samuelson focussing on these aspects of his work seems to be warranted, which would shed further light on his legacy in the whole area of normative economics. I wish him continuous health, and I am looking forward to learning further from him for many years to come.

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