Ethics and welfare: Samuelson’s welfare economics, 1932-1947

Version 3

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1. Introduction

After the appearance of Kenneth Arrow’s *Social Choice and Individual Values* (Arrow, 1951), which questioned the possibility of deriving a social welfare function from the preferences of individuals in an ethically acceptable way, Paul Samuelson continued to hold to the notion of a social welfare function that he and Abram Bergson had developed over a decade earlier. This paper is not concerned with the ongoing and frustratingly opaque debate between the two economists on the merits of their conceptually very different welfare functions, surveyed by Herrade Igersheim (2017). Instead it explores the origins of Samuelson’s ideas about welfare which led him to an approach in which social welfare did not necessarily rest on individuals’ judgments of their own welfare. It is argued that, despite his emphatic claims that the Social Welfare Function was Bergson’s idea, Samuelson drew from it implications that, if Bergson had them in mind, remained implicit. It is further suggested that these ideas, which opened up the possibility of a formal “non-welfarist” analysis, combined with his prior exposure to axiomatic treatments of ethics, primed Samuelson to see Arrow as proposing a constitutional rather than a welfare function.

2. Under the spell of Knight
Samuelson was exposed to welfare thinking as an undergraduate at the University of Chicago. In the interdisciplinary social science course that he took in his sophomore year, he was exposed to ideas about the “human costs” of industry and the “human utility” of consumption on which the required reading was John A. Hobson’s *Work and Wealth: A Human Valuation* (1914; see Backhouse, 2017, p. 49). In this book, Hobson drew on resources from John Ruskin to differentiate between “economic” and “human” costs, imposing ethical judgments that were not necessarily those of the people whose activities were being analysed. Samuelson’s response to this material is unknown, but such ideas would have resonated with those of Frank Knight, who never taught him in a for-credit course, but with whom he became obsessed. He claimed that when he left Chicago he had read everything that Knight had ever written. Knight’s ideas on welfare economics were brought together in a collection of his essays that four graduate students assembled to mark his fiftieth birthday, published as *The Ethics of Competition* (1997) in the year that Samuelson graduated. Samuelson was not involved in this project but, given his infatuation with Knight and his friendship with George Stigler, one of the editors, he will have been familiar with these essays. He loved Knight’s iconoclasm and exhibited clearly in the essays.

A repeated theme in Knight’s writings was that wants were not to be taken as given. They were in large part determined by the economic system. Thus while he found much to admire in Pigou’s work, he was critical of the idea that welfare should be calculated by adding up the total of satisfied wants. He accepted the argument that individualism and the free market would place resources in the hands of those who valued them most, and maximise the social dividend, but he denied that this constituted “a sound ethical social ideal” (Knight, 1923, p. 588; 1997, p. 40). Social ideals had to come from ethics, not from arguments about the efficiency of the economic system.
We contend not merely that such ideals are real to individuals, but that they are part of our culture and are sufficiently uniform and objective to form a useful standard of comparison for a given country at a given time. … In what follows we shall appear to what we submit to be the common-sense ideals of absolute ethics in modern Christendom. (Knight, 1923, p. 583; 1997, p. 36).

Like Gunnar Myrdal (1932; Emmett, 2009, p. 99). Knight made no attempt “to ‘settle’ moral questions or set up standards” but merely to “bring out the standards involved in making some familiar moral judgments in regard to the economic system, and to examine them critically (Knight, 1923, pp. 583-4; 1997, pp. 36-7). Knight summarised his methodological position as being “any judgment passed upon a social order is a value judgment and presupposes a common measure and standard of values, which must be made as clear and explicit as possible if the judgment is to be intelligent. Economic efficiency is a value category and social efficiency an ethical one” ((Knight, 1923, p. 623; 1997, p. 66).

Knight thus took into account the need for physical goods and the implications of the process of competition. His conclusion was that, irrespective of whether or not it was possible to find a better form of social organisation, the competitive system had weaknesses. “There is,” he wrote, “a certain ethical repugnance attached to having the livelihood of the masses of the people made a pawn in such sport [i.e. “business considered purely as a game”], however fascinating the sport may be to its leaders”, contrasting action motivated by rivalry with “the Pagan ethics of beauty or perfection and the Christian ideal of spirituality” (Knight, 1923, p. 624; 1997, p. 67).

3. Collaboration with Bergson
Samuelson has argued that credit for developing what has come to be known as the Bergson-Samuelson social welfare function rests squarely with Abram Bergson, then Abram Burk (he changed his name as a matter of principle because he did not consider it sounded sufficiently Jewish, the opposite of the normal practice). “Mine,” he wrote, “was the spectator’s seat for Bergson’s creative travail. I was the stone against which he honed his sharp axe—the semiabsorbing, semireflective surface against which he bounced off his ideas” (Samuelson, 1981, p. 223). In conversation with Kotaro Suzumura (2005, p. 334), Samuelson went slightly further in claiming that he was the “helpful midwife” who helped pull the baby out, denying emphatically that he was a co-author of the crucial paper.

Bergson and Samuelson came to the idea of a social welfare function whilst attending courses as graduate students at Harvard in 1935-7 (see Backhouse, 2017). They both wrote articles on consumer theory, on the measurement of utility (Burk (Bergson), 1936; Samuelson, 1937; Samuelson, 1938c). In these papers, they noted, Bergson implicitly and Samuelson explicitly, that there was a gap between that field and welfare economics. Thus Bergson wrote that utilities, as calculated by Ragnar Frisch, whose work he was criticising, could “in no sense be considered measurements of real money utility” (Burk (Bergson), 1936, p. 42, n. 1). If it did not measure real money utility then a fortiori utilities could not have welfare implications. Samuelson went further, writing at the end of his first paper:

any connection between utility as discussed here and any welfare concept is disavowed. The idea that the results of such a statistical investigation could have any influence upon ethical judgments of policy is one which deserves the impatience of modern economists. (Samuelson, 1937, p. 161)

He made exactly the same point in his next publication:
nothing said here in the field of consumer’s behaviour affects in any way or touches upon at any point the problem of welfare economics, except in the sense of revealing the confusion in the traditional theory of these distinct subjects. (Samuelson, 1938c, p. 71)

Implied in Samuelson’s brief remarks is a criticism of virtually all existing literature on welfare economics for confusing two completely different concepts. “Utility”, as used in the theory of the consumer, was a device for analysing how consumers behaved—for modelling the choices they made when confronted with prices and incomes—but it had been widely assumed that it could also be used to form welfare judgments. Modern writers avoided committing themselves to utilitarianism, with its suggestions of hedonism (that people were mechanical seekers of pleasure and avoiders of pain) but the connection between welfare and the consumer had not been abandoned. A. C. Pigou, whose Economics of Welfare (1920, 1932) had by then been through four editions and whose work dominated discussions of welfare in the English-speaking world in the 1920s, argued in terms of “satisfactions” rather than utilities, and he pointed to many limitations of the utilitarian criterion, but he still grounded his analysis of welfare on his theory of the consumer. Pareto (1909) also refused to argue in terms of utility, preferring the term ophelimité but though he was willing to distance himself further from an aggregative notion of welfare, he still saw a close connection between the two. So too did most of the literature on welfare economics with which Samuelson and Bergson were engaging.

In contrast, though the idea was not developed, Samuelson described welfare economics as “ethical judgments of policy.” He had not forgotten what he had learned from Knight. Given the timing, it seems plausible to conjecture that in writing these brief remarks, both
tacked on at the very end of the paper, he was responding to reactions to Bergson’s article, published shortly before.¹

Their starting point for more substantial work on the problem of welfare was Pareto. At some point in 1937, during the second year of Samuelson’s coursework, Bergson kept asking Samuelson, “What can Pareto mean by this 1898 use of the French singular when he speaks of ‘the social optimum’?” (Samuelson, 1981, p. 224). Their conclusion was that Pareto’s writings were ambiguous and that he meant different things. Samuelson explained this to Suzumura (Suzumura, 2005, p. 334) in the following way.

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—that he may momentarily have had the notion of an imposed-from-outside social welfare function … But I thought I detected in it also a positivistic 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.

Samuelson makes two points here. The first is that he thought Pareto glimpsed the idea of “a positivistic real political function of certain elites in society”, an idea he no doubt expressed diffidently as he could have been reading Arrow’s social welfare function into his memory of Pareto. The second, is the idea that he and Bergson developed: the notion of “an imposed-

¹ This remains a conjecture, for the precise timing of these articles, and the lags between submission and publication, are not known.
from-outside” function that represented a particular set of ethical values. Welfare was a normative judgment conceptually completely different from propositions about behaviour. However, in Bergson’s paper on the subject (Bergson, 1938) such points were not made explicitly.

4. Bergson’s use of the social welfare function

Bergson (Bergson, 1938, p. 310) described the object of his paper as being “to state in a precise form the value judgments required for the derivation of the conditions of maximum economic welfare which have been advanced in the studies of the Cambridge economists [Marshall, Pigou, Kahn and Edgeworth], Pareto and Barone, and Mr. Lerner.” In other words, he was not challenging their approach, merely explicating it. He then simplified his notation by assuming there were two consumption goods, two types of labour, two non-labour inputs into production and that each commodity was produced in a single production unit. Ignoring non-economic variables that might affect welfare, he focused on an Economic Welfare Function (EWF), in which economic welfare was a function of each person’s consumption of each of the two consumption goods (x and y), each person’s supply of each type of labour in producing each consumption good \((a^x, b^x, a^y, b^y)\), and the quantities of non-labour inputs \((C, D)\) used in producing each consumption good.

\[
E = E(x_1, y_1, a_1^x, b_1^x, a_1^y, b_1^y, \ldots, x_n, y_n, a_n^x, b_n^x, a_n^y, b_n^y, C^x, D^x, C^y, D^y)
\]

He then discussed the conditions under which Economic Welfare would be maximized, including the conditions derived by the three groups of economists mentioned earlier.
It was only when Bergson discussed the Pareto-Barone conditions that he referred to individuals’ judgments of their own welfare. They assumed that if the quantities of consumption goods and labour supplied were constant for all except the \(i^{th}\) individual, “if the \(i^{th}\) individual consumed the various commodities and performed the various types of work in combinations which were indifferent to him, economic welfare would be constant (Bergson, 1938, p. 318). This implied that the EWF must take the form,

\[
E = E[S^1(x_1, y_1, a^1_n, b^1_n, a^1_i, b^1_i)\ldots S^n(x_n, y_n, a^1_n, b^1_n, a^1_i, b^1_i)]
\]

where the functions \(S^i(\cdot)\) are individuals’ indifference loci.

It is notable, given more recent discussions, that Bergson did not discuss where his EWF might come from. It is simply a mathematical statement, the explanation of which is initially left open pending discussion later on, when he explains that welfare principles have to be based on the prevailing values of the community being discussed.

[O]nly if the welfare principles are based upon prevailing values, can they be relevant to the activity of the community in question. But the determination of prevailing values for a given community, while I regard it as both a proper and necessary task for the economist, and of the same general character as the investigation of the indifference functions for individuals, is a project which I shall not undertake here. (Bergson, 1938, p. 323)

This suggests not so much an imposed-from-outside welfare function as one that reflects the values of the community being analysed, which is potentially vulnerable to Arrow’s critique.

As he had promised at the outset, Bergson analysed the value judgments implicit in the conditions others had developed. He was particularly critical of the Cambridge economists
use of the concept of utility which, he stressed, did not avoid the need to introduce ethical judgments. Rather, reference to utility served to conceal the role of value judgments.

[It] does not provide an alternative to the introduction of value judgments. First of all, the comparison of the utilities of different individuals must involve an evaluation of the relative economic positions of these individuals. No extension of the methods of measuring utilities will dispense with the necessity for the introduction of value propositions to give these utilities a common dimension. Secondly, the evaluation of the different commodities cannot be avoided, even tho this evaluation may consist only in a decision to accept the evaluations of the individual members of the community. (Bergson, 1938, p. 327)²

Utilitarianism introduces value judgements in a way that Bergson considered misleading, the reason being that statements about “the aggregative character of social welfare” or about “equality of marginal utilities when there is an equal distribution of shares, provided temperaments are about the same” sound like factual propositions even though they are not. It serves to conceal the value judgements being introduced. On the other hand, there were similar problems in the writing of those, such as Lerner, who had turned their back on utilitarianism. In rejecting utilitarianism they effectively excluded certain welfare conditions from their analysis, for reasons that were never made clear.

5. Debating welfare economics

² Bergson added a third objection but these two are sufficient for the point being made here.
Though the social welfare function was Bergson’s, it was Samuelson who defended the underlying approach to welfare economics during the next decade. Bergson’s publications were confined to issues relating more directly to problems confronting the government agencies for which he was working during the war—price flexibility and the economics of the Soviet Union. The first context for Samuelson’s application, and hence defence, of the approach was international trade. “Welfare economics and international trade” (Samuelson, 1938b) opened with the observation that the theory of international trade had been developed in order to answer normative questions. Given that the theory of welfare economics was going through a period of controversy, it was, he contended, appropriate to determine whether conclusions reached in trade theory were valid.

Samuelson’s starting point was that welfare economics implied making ethical judgements.

At the outset, it is understood of course that every discussion of welfare economics implies certain ethical assumptions. I do not propose, however, to discuss the philosophical grounds for holding or rejecting different ethical precepts or assumptions. Rather will the discussion be confined to the implications of different ethical assumptions and the necessary and sufficient presuppositions or the truth of various theorems. (Samuelson, 1938b, p. 261)

He simplified the argument, avoiding the issues that arguably made welfare economics so difficult, by considering trade between two individuals, so that no aggregation problems arose within each of the parties engaging in trade. This meant that he could represent each trader’s behaviour by a set of indifference curves. He made the assumption that if one trader preferred one outcome to another, this was better. This left the problem of measuring welfare when one
of the two parties to trade was made better off and the other worse off, for there was no way
to measure or add their utilities. Failing to solve this problem meant that Samuelson could not
show that free trade was optimal from a welfare point of view, though he could show that
some trade was better than no trade. The following year he developed this argument, arguing
that if the introduction of trade resulted in relative prices that were different from those
prevailing with no trade, all parties to trade would be better off than if trade did not take place
(Samuelson, 1939, p. 200). This result might be familiar, but he claimed that his was the first
rigorous proof.

Samuelson’s discussion of the case where countries are not composed of identical
individuals makes it clear that he was thinking in terms of what became Pareto-optimality.
Indifference curves are taken to denote well-being and the problem of evaluating welfare is
simply that of comparing different peoples’ gains and losses. Perhaps implicitly responding
to John Hicks’s attempts to reinstate the concept of consumers’ surplus, Samuelson noted that
“constructs such as consumers’ surplus are in general inadmissible” and that in the special
cases where they could be used, they were “perfectly arbitrary and conventional, adding
nothing to the analysis” (Samuelson, 1939, p. 205).

Samuelson also discussed welfare with one of Harvard’s Senior Fellows, the
mathematician George Birkhoff. In January in January 1940, referring to an earlier
conversation, Birkhoff wrote to Samuelson:

For a long time I have been interested in a critical analysis of the type of axiomatics
which is generally implicit in economic reasoning and in reasoning such as I
employed in my lecture on ethics. As a preliminary to this question, I would in
particular like to talk to you about the systems for proportionate representation in
Congress which seems to have been so thoroughly treated by Huntington. (Quoted in Backhouse, 2017, p. 190)

The content of their discussion is unknown, but it must have taken place, for in the published version of his lectures, Birkhoff thanked Samuelson for his advice. E. V. Huntington, another Harvard mathematician, had proposed an axiomatic framework for solving the problem of how many representatives each state should have in Congress, given the constraint that the number had to be an integer, making strict proportionality impossible. Huntington specified what seemed reasonable conditions any allocation should satisfy and used them to analyse various rules for allocating representatives. Birkhoff sought to generalise this method to ethics. He confined himself to simple examples, and certainly did not use the type of logic that Arrow was later to use, but he nonetheless reached the conclusion that “It seems to be abundantly borne out in this [the problem of representation] and other examples that apparently justifiable postulates are often mutually contradictory, so that a choice has to be made between them” (Birkhoff, 1941, p. 18). He tackled the problem of how to design voting rules, concluding that with some rules voters might have an incentive to mis-represent their preferences, a situation he considered unacceptable (Birkhoff, 1941, p. 19).

Shortly after Bergson’s article, Samuelson restated its conclusion in arguing that a line of theory initiated by Oskar Lange, and involving Roy Allen, Hicks’s co-author in their articles on indifference curves, about the determinateness of the utility function was misconceived. “As Mr. Burk [Bergson] has shown”, Samuelson argued, “it is only necessary in order to make welfare judgements that we agree upon the definition of an ordinal function involving as variables the quantities of goods consumed by all individuals; and that even if we permit the individual's own preferences to ‘count,’ there is still no need for any cardinal measure of
utility” (Samuelson, 1938a, p. 65). Assuming cardinal utility added “literally nothing” to welfare analysis. Notwithstanding this, he felt able to conclude by agreeing with Lange that earlier mathematical economists had been very inconsistent in their work.

The occasion for a more explicit assessment of what he now called “the new welfare economics”, in which his work was placed alongside those of Hicks, Harold Hotelling, Nicholas Kaldor, Lerner and others, was a critique by his friend from his Chicago student days, George Stigler. Stigler published a paper that claimed that the “new welfare economists” (including Samuelson in the paper on international trade cited above) claimed that “many policies can be shown … to be good or bad without entering a dangerous quagmire of value judgments” (Stigler, 1943, p. 355). Claiming that the new theory, though usually presented using formidable mathematics, was simple enough to be summarized in a half a page, he offered what he believed was a strong critique. If the precepts of the new welfare economics were followed, thieves would be rewarded for their crimes and wars should be fought with cheque books (ibid., p. 356). The problem was, he contended, that societies were concerned with more than maximizing national income. Policy changes would lead to changes in individuals’ indifference curves (to changes in their preferences), making it impossible to use them as the basis for welfare analysis. What societies required, Stigler, contended, was consensus on the ends that society is to seek. Without such consensus, and a belief that the system is fair, the social system will disintegrate.

Samuelson (1943) responded to this by saying that he agreed with much of what Stigler was saying—economic welfare was not necessarily the main goal in society and tastes would change—but Stigler had got the new welfare economics completely wrong. The new welfare economics was not intended to displace the old but to derive necessary conditions for social

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3 The evidence for this statement on timing is that Samuelson cites Bergson’s paper and his was published in the same year.
welfare, basing them on the very mild assumptions that it is better to have more than to have less, and that “individual tastes are to ‘count’ in the sense that it is ‘better’ if all individuals are ‘better’ off” (Samuelson, 1943, p. 605). This is all entirely consistent with the claim that ethical judgments have to be imposed but the emphasis is, as in his work on trade, on what is now called Pareto-efficiency. In saying that the new welfare economics is no substitute for the old, he implied that stronger ethical judgments can and should be made, though it is not a point he chose to stress.

6. A general theory of welfare economics

Samuelson’s PhD thesis (Samuelson, 1940), written in 1940 after he had left the Society of Fellows and was now free to work towards a higher degree, and examined in February 1941, contained material on the measurement of marginal utility, but did not discuss welfare. On the other hand, when he turned the thesis into the book, *Foundations of Economic Analysis* (1947) he included an entire chapter, spanning fifty pages, on welfare economics. It begins with what is effectively a long defense of the historical claim he had made in his *Econometrica* article about the process whereby first ethical and second psychological elements had been removed from consumer theory.

Economics had, Samuelson claimed, always been associated with the notion that “in some sense perfect competition represented an optimal situation”, albeit expressed in different ways (Samuelson, 1947, p. 203). It was exemplified by the case for free trade. This clearly normative idea was bound up with teleology, whether ideas of natural rights, natural selection or the Malthusian doctrine that competition was necessary to bring out the best in people. But

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4 Note that this was published during a crucial year in the Second World War.
though these were generally conservative ideas, used to defend the status quo, Samuelson noted that the idea that perfect competition could be a radical one, used to challenge the status quo, as when it was used as an argument for anti-monopoly legislation.

More convincing were arguments that did not depend on teleology. The argument that some trade was better than no trade could easily (albeit illegitimately) become an argument for free trade. This was reinforced by the argument that in an equilibrium, every agent is doing the best they can for themselves. So by the end of the nineteenth century, economists, including Walras, Jevons, Launhardt, Wicksell and Marshall were in a position to construct proofs that competitive equilibrium was optimal. Some went further, trying to argue that the distribution of income produced under competition was optimal and though John Bates Clark’s view that people were morally entitled to their own marginal product was attractive to many in a frontier society, such notions were inconsistent with widely held ethical views. Generally, economists concluded that, subject to some caveats, perfect competition was optimal provided that the distribution of income was appropriate. However, all of them made mistakes with the result that none of them provided a proof of this claim. For example, Walras barely went beyond the assertion that people did what was best for themselves, Jevons assumed he could add up utilities, and Marshall was made the mistake of assuming that he could measure utility with consumers’ surplus, an idea Samuelson discussed at length because Hicks had recently sought to revive it.

The economist who went further was Pareto, who argued that competition produced “a maximum d’utilité collective regardless of the distribution of income, and indeed even if the utilities of different individuals were not considered to be comparable” (Samuelson, 1947, p. 212). This maximum position “was defined by the requirement that there should not exist any possible variation or movement which would make everybody better off” (ibid., italics in original). Pareto’s exposition was not ideal, partly because he worked with infinitessimal
changes—one of the main features of his dissertation was that he also analysed finite changes—but the main defect in his exposition was that he failed to make it clear that the optimum he had defined was not unique. What remained was to work out the conditions that it implied, a process that writers from Barone to Lerner and Hotelling had undertaken. This development culminated in the work of Bergson.

The last writer to be mentioned is Professor A. Bergson. He is the first who understands the contributions of all previous contributors, and who is able to form a synthesis of them. In addition, he is the first to develop explicitly the notion of an ordinal social welfare function in terms of which all the various schools of thought can be interpreted, and in terms of which they for the first time assume significance. (Samuelson, 1947, p. 219).

The stage was thus set to introduce the idea of the social welfare function, which Samuelson was adopting as his own approach to the problem.

Samuelson’s defense of the notion of a social welfare function began with the charge made by Lionel Robbins (Robbins, 1932) that value judgements had no place in scientific analysis. However, whilst such a view was useful in culling bad reasoning, it went too far.

It is a legitimate exercise of economic analysis to examine the consequences of various value judgments, whether or not they are shared by the theorist, just as the study of comparative ethics is itself a science like any other branch of anthropology. (Samuelson, 1947, p. 220).

Contrary to Robbins and many proponents of the new welfare economics, Samuelson contended that even propositions that rely on interpersonal utility comparisons have “real content and interest for the scientific analyst” even though the economist may not wish to
deduce or verify the ethical judgments on which they rest, “except on the anthropological level”. He summed this up when he explained his use of a 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. (Samuelson, 1947, p. 221)

All he assumed about such ethical beliefs was that they provided an ordering of possible states of the world and that they were transitive (that if A was better than B, and B better than C, then A was better than C).

At this point, even though Samuelson’s position might be read into Bergson’s formulation of the problem, he was taking a more radical stance. Where Bergson assumed that his EWF reflected the consensus of the relevant community, other functions not being relevant, Samuelson argued that the economist could analyse any set of ethical judgments, completely separating the problem from that of discerning the views of the community whose welfare was being analysed.

To this point, Samuelson’s analysis led up to Bergson’s formulation of the problem of welfare, though he provided a more substantial historical context and cutting the analysis free from the tangled debates of the 1930s. This freedom from engaging closely with the terms in which welfare had been discussed in the 1930s meant that Samuelson could outline, far more clearly than Bergson had done, various ethical judgments that might be used to give structure to the social welfare function and make it possible to derive substantial results. His starting
point was a function that was even more general, and with less content, than Bergson’s, for it simply stated that social welfare, \( W = W(z_1, z_2, \ldots) \) where the \( z \)’s are variables that are thought relevant to social welfare. This formalized the problem but added no content whatsoever, because nothing was said about either the \( z \)’s or the form of the function \( W \). Anything more specific than this involved making ethical judgements.

Making explicit ideas that were at best implicit in Bergson’s discussion, Samuelson made it clear that such a function could be used to reference any set of ethical judgments. There was no need for those to be the ethical judgments of the society being appraised.

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 characterise some ethical belief—that of a benevolent despot, or a complete egotist, 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. (Samuelson, 1947, p. 221)

All that was required were the technical requirements that the function be defined over all relevant configurations of the economic system and that it be transitive (that if A is better than B, and B is better than C, then A is better than C).

After observing that the \( z \)’s were not normally taken to include prices (itself a value judgment) he explained that many of the variables would be specific to individual households. It mattered what different households consumed, and the services different households provided were not interchangeable. The crucial assumption was, however, the fifth, that individuals’s preferences “count”. Yet, important as this assumption was, and though it was, in the context of the 1940s, ideologically charged as Samuelson implicitly
noted when he referred to the attitude of the “soap box speaker” who said, “When the revolution comes, you will eat strawberries and cream, and like it!” (Samuelson, 1947, p. 224), there were still objections that could be raised to it. One of these was handled by a further assumption that individuals’ preferences were to depend only on their own consumption and not that of others, so as to rule out Veblenian conspicuous consumption, envy and related phenomena.

Thus far, the ethical judgments made were, Samuelson contended, held by most economists. He then explored three more controversial ones: that the social welfare function be nearly symmetric with respect to the consumption of all individuals (that everyone counts for approximately the same); and that welfare was the sum of individuals’ cardinally measurable utilities. These involved judgments about the distribution of resources. It is important to note that Samuelson was not arguing that such judgment were illegitimate: merely that they did involve value judgments even though they might appear to be mere technical assumptions.

Samuelson then turned to the mathematical analysis of welfare, using this list of value judgments first to narrow down the z’s to quantities of commodities and productive services, to render the social welfare function as $W = W(U_1(\cdot), U_2(\cdot), \ldots)$, from which he could derive the now-familiar conditions relating to production and exchange. More unusually, given subsequent developments, he had a section discussing interpersonal optimum conditions. The point here is that he did not claim that interpersonal comparisons could not be the subject of scientific analysis. His first point was that the previously derived optimum conditions defined an infinite number of points: in terminology Ian Little introduced shortly afterwards, there was an infinite number of Pareto optima. All that the production and exchange conditions

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5 The importance of individual rationality as a distinction between the United States and the Soviet Union has been discussed by Amadae, 2003.
could do was to establish that there was an equation relating the well-being of different people in the system, \( P = P(U_1(.), U_2(.), ..., U_n(.)) \): a utility possibility function. Using this device, he proceeded to make sense of the concepts of marginal social costs and benefits that Pigou (Pigou, 1932) had used to construct a case for government intervention.

Samuelson used this to mount a brief discussion of public policy noting that the lump-sum taxes and subsidies favoured by some economists might not work, though focusing on the importance of facing up to the ethical judgments involved in policy recommendations. Even though talk of lump-sum taxes enabled distributional issues to be separated from the problem of resource allocation, reduced the problem of distribution to the politically convenient one of income distribution, Samuelson argued that “from a consistent ethical point of view decisions should be made concerning the welfare function itself. Beliefs concerning the distribution of income are derivative rather than fundamental” (Samuelson, 1947, p. 248).

The formal optimum conditions derived by Samuelson focused on those necessary for Pareto optimality. However, Samuelson’s approach diverged sharply from that of many advocates of the new welfare economics, for he made no attempt to cut his analysis short at propositions that did not rely on interpersonal utility comparisons. There was no opposition, he claimed, between the new welfare economics and the old: Paretian welfare economics was included within Pigovian welfare economics. The only general theory of welfare was Bergson’s, and that needed supplementing with specific ethical judgements. He even expressed doubts about the value of aiming to achieve the Pareto-optimum conditions, noting the point later taken up by Richard Lipsey and Kelvin Lancaster (Lipsey and Lancaster, 1956) in their “general theory of the second best”, that it was possible that if some conditions were not satisfied, there might be no reason to argue that others should be. For example, if most industries charged prices greater than marginal social cost, it might not be desirable for
the remaining ones to set price equal to marginal cost. Furthermore, in making judgments about such problems, it might be appropriate to take into account the distribution of income. Dynamic considerations further complicated the picture, with the need to recognise that imperfect competition might lead to greater innovation, a point then being made by one of his teachers, Joseph Schumpeter (Schumpeter, 1942).

The phrase Bergson-Samuelson social welfare function is so well ingrained that it is hard to see them as doing anything different, especially when Samuelson attributes the function so clearly to Bergson, and when their formulations are so similar. However, there are differences in the way they were presented.

1. Samuelson’s function is completely general, not specifying the variables entering the function.
2. Samuelson was explicit in arguing that the function was a representation of a set of ethical judgments that could come from anywhere.
3. The most general form of Samuelson’s social welfare function made no assumption that social welfare depend on individuals’s judgments of their own welfare. This involved making a judgment of individualism, and though this might be a natural assumption to make (especially an America entering the Cold War, in which individualism was seen as distinguishing the two parties) there was no necessity to do so. The door was thus open, at least in theory, to a welfare economics that did not rest on individuals’ evaluations of their own welfare.

Bergson’s function was, leaving aside its lesser degree of generality, formally the same as Samuelson’s, but his exposition suggests that he may not have fully realised the significance of these points. Indeed, his remark that it made no sense to use ethical views that did not reflect the views of those in the society being appraised suggests that he may not have realised the significance of the second point. Moreover, confining his function to traditional
economic variables (households’ consumption and their supplies of labour) biased the conclusions in a traditional direction. Samuelson was to reach similar conclusions to Bergson, but he made it much clearer that these conclusions were the result of making additional ethical judgments that one might or might not choose to make.

Looking at his education and his activities in the period when he made the decision to write a chapter on welfare economics, it is hardly surprising that Samuelson took the stance that he did. He had learned from Knight that welfare was about making ethical judgments, that individuals’ preferences changed and should not necessarily be taken as given, and that in such a context what Hicks was later to call “welfarism” did not make sense. He had been exposed to axiomatic treatments of ethics and when his friend Stigler was dismissive of the new welfare economics, the obvious response was to explain that it did indeed rest on ethical judgments. However, though his framework opened up the possibility, with a clarity not found in Bergson’s paper, he did not explore the possibility of non-welfarist ethical judgments. Given that this followed a discussion of consumer and production theory that is not surprising, though exploration of other types of judgment would have fitted well with his belief that the behaviour of aggregates could not be analysed in terms of maximisation.

References


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