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The Pareto Principle*

Abstract: The purpose of the paper is a discussion of the meaning and relevance of the Pareto principle in economics. To begin with, the principle is briefly retraced in Pareto's own writings. Its contemporary meaning was, however, developed in the context of the "New Welfare Economics". While Pareto technically employed the principle in order to describe an equilibrium situation, Kaldor and Hicks developed it somewhat differently as a yardstick for economic policy formulation. Sometimes, the principle is also discussed as a decision rule, and in this context some critics – though not the present author – believe it to have a conservative bias. Finally, recent discussions center around the incompatibility of the Pareto principle and "liberal" values. This conflict might be of limited relevance, only, due to a misconstrued formalism.

Introduction

From time to time, it is useful to take account of the meaning and relevance of basic concepts, which are in everyday use and more or less taken for granted¹ in one's discipline. One of these basic concepts in economics, in fact its methodological cornerstone², is the notion of Pareto optimality. In what follows, I shall first briefly retrace the principle³ in Pareto's own writing⁴ (I). It was not, however, until Kaldor (1939) and Hicks (1939) began formulating what was at that time referred to as the "New Welfare Economics" that the principle as we understand it today became to be generally recognized, accepted and known under Pareto's name (II). While Pareto technically employed the principle in order to describe an equilibrium situation, Kaldor and Hicks developed it somewhat differently as a yardstick of economic policy formulation. This is surprising in so far as under the conditions of Pareto's analysis, the Pareto optimum describes a situation which is retained in the absence of political action. There are, however, instances of *collective decision making* where decentralized decision making cannot be relied upon and where, on the other hand, the Pareto principle if applied as a *decision rule* may not be appropriate, i.e., optimal (III). Some writers have even criticized the principle on the grounds that it favors the status quo (both as a yardstick for economic policies (see Samuels 1972, chapter 3; Samuels 1974, chapter 7) and as a rule of decision making) and, in

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this sense, conservative policies (IV). This criticism, although irrelevant in Pareto's context, is pertinent to the Kaldor-Hicks formulation, but, at least in the view of this author, not very convincing. Finally, recent discussions center around the incompatibility of the Pareto principle and "liberal" values (see Sen 1970a) being implicit in decision rules (V). This incompatibility may, however, be a misconstrued formalism, hardly in conflict with the notion of Pareto optimality.

I. Ophelimity and Economic Equilibrium

Quite recently, Sir John Hicks re-examined the "Scope and Status of Welfare Economics" in two related papers (Hicks 1974, 1975). Professor Pigou's *Economics of Welfare* (1938)⁵ he reminded us, had after its first publication in 1920 become a success only insofar as the "superstructure" of the theory was concerned, while its basis, the very definition of "welfare" indeed, did not win the acceptance of the academic community in economics. His first definition :

"that part of social welfare which can be brought, directly or indirectly, into relations with the measuring-rod of money." (Pigou 1938, 11)

seemed, somehow unjustifiably, to refer to only a part of a broader and probably "moral" concept. The second definition

"the economic welfare of a community consists in the balance of satisfaction from the use of the national dividend over the dissatisfaction involved in the making of it." (Pigou 1938, 85)

seemed to imply that individual satisfactions could be added in a meaningful way, the sum being the welfare of the community.

A respected theory was "floating in the air" (Hicks 1975, 308). But the solution to this dilemma, Dr. Hicks noted, none less than Pareto already seemed to have provided:

"It was at this point that a hint was discovered in one of the more obscure chapters of Pareto's *Manual*, which seemed for a while to provide the solution. Pareto was himself the father of ordinalism; he had been well aware of the difficulties of adding utilities; yet he had maintained that there is a sense in which "collective utility" (or ophelimity, as he preferred to call it) is definable." (Hicks 1975, 308-9)

Let us have a closer look at what Pareto really wrote. The concept which began to be known as the Pareto criterion was introduced by Pareto as a property of equilibrium under perfect competition:

"The members of the collectivity enjoy *maximum ophelimity* in a certain position where it is impossible to find a way of moving from that position very slightly in such a manner that the ophelimity enjoyed by each of the individuals of that collectivity increases or decreases." (*Manual*, VI, § 33)

In the appendix of the *Manual*, however, he worked out the concept more precisely, also including the “weaker“ case allowing for unchanged individual positions.⁶ It is important, though, to point out that the notion of maximum ophelimity was considered to be an analytical tool in the positive science of economics, no normative attributes being attached to it. Economic equilibrium was defined as

“the state which would maintain itself indefinitely if there were no changes in the conditions under which it is observed.“ (*Manual*, III, § 22)

An equilibrium is the end result of “real“ movements, and “virtual“ movements could lead away from the equilibrium. Both movements, real and virtual, are the object of political economy, as defined by Pareto,

“real movements in order to know how things take place and virtual movements to understand the properties of certain economic states.“ (*Manual*, III, § 22)

The maximum of ophelimity not only establishes itself, so to speak, it does so without any political action aiming at its attainment in the interest of general welfare. However, in Pareto’s view, it did not have anything recommendable about it to warrant such an action,⁷ ophelimity being an empirical, not a normative category.

This may become even more obvious when Pareto’s definition of ophelimity is recalled – the maximum of which he defined in the quote given above:

“for an individual, the ophelimity of a certain quantity of a thing added to another known quantity [. . .] which he already possesses, is the pleasure which this quantity affords him.“ (*Manual*, III, § 32)

Similar to Pigou’s concept of economic welfare, Pareto defined “ophelimity“ very narrowly, carefully avoiding, however, the broader connotations which the notion of welfare usually carries. First, ophelimity referred to (marginal) perceptions of satisfactions from the point of view of the experience of the individual. Secondly, it referred to only those satisfactions which the individual could experience by spending his income in the market place (*Manual*, VI, § 30). This follows from the rather narrow scope (see Tarascio 1969 and Samuels 1972) of economics as delineated by Pareto, which explicitly excluded what is today referred to as public choice.⁸ Pareto went even further. He made it quite clear in the first paragraph of his *Manual* that economic policy was not his concern. He was interested neither in formulating

“prescriptions which are useful to private individuals and public authorities in their economic and social activity.“ (*Manual*, I, § 1)

nor in a normative doctrine, but exclusively in searching

“for the uniformities that phenomena present [. . .] without having any direct practical usefulness in mind.” (*Manual*, I, § 1)

Looking back from today’s experience, it seems to be surprising how Pareto’s conceptualization of an equilibrium could gain the importance it now has as a criterion of economic policy, in spite of Pareto’s intentions.

Complementary to Pareto’s narrow definition of the scope of economics, and the concept of ophelimity defined accordingly is his general theory of society (: sociology),⁹ which to a great extent comprises areas of research which today would be regarded as forming part of economics.

Contrary to the impression one might get from the contemporary use of the Pareto criterion as a yardstick of the theory of economic policy, Pareto did not advocate a narrow individualism on which to build a theory of policy. Instead, in his general social theory, he postulated utility functions for individuals as well as collectivities. The assessment of the utility of a person or group differs greatly depending on *whose* utility is being assessed as well as on *who* does the assessing. Hence, quite a variety of different utility functions can be categorized. In principle, utility functions can be postulated for individuals as well as groups of all natures. As far as these functions capture the utility to the group or person concerned, they can measure it first directly, second, indirectly as the satisfaction derived from being part of a larger entity, and third, in relation to the utilities of other individuals or groups. Of each of the various categories, there exists in turn a multitude of different formulations, depending on who tries to assess the utility of some individual or group and the motives that guide this assessment (*Treatise*, § 2116 *passim*). Since the behavior of each individual is guided by the experienced satisfaction (utility) in at least three different ways, the concept of net utility could be introduced if it were possible to determine the relative weights of the different utility dimensions (*Treatise*, § 2120). Likewise, if it were possible to assign weights to the different utilities of an individual or group, thus defining a utility index, a maximum utility of an individual or group would be defined as where in a certain state the utility has a larger index than in the states surrounding it – a definition which formally corresponds to the definition of maximum ophelimity to an individual quoted above (see *Treatise*, § 2122 for the exact definition).

Apart from the utility *to* an individual or group, the utility *for* a community is relevant for the notion of equilibrium¹⁰ in a collectivity. For this equilibrium to be unique, it has to be postulated that every individual achieves the maximum ophelimity within the restrictions (“ties”) operating in that society. As soon as some restrictions disappear, the perfect determination of the equilibrium comes to an end. This is exactly when the problem of how to evaluate political change arises and where the Pareto criterion tends to be invoked. Pareto has this to say:

“There are two quite distinct types [of movements]. Movements of the first type, P, are such that, beneficial to certain individuals, they are necessarily harmful to others. Movements of the second type, Q, are such that they add to the advantage [. . .] of all individuals without excep-

tion. The points P are determined by equating with zero a certain sum of homogenous quantities dependent on heterogenous ophelimities.

Consideration of the two types of points, P and Q, is of great importance in political economy. When the community stands at a point, Q, that it can leave with resulting benefits to all individuals, procuring greater enjoyments for all of them, it is obvious that from the economic standpoint it is advisable not to stop at that point, but to move on from it as far as the movement away from it is advantageous to all. When, then, the point P where that is no longer possible, is reached, it is necessary, as regards the advisability of stopping there or going on, to resort to other considerations foreign to economics – to decide on grounds of ethics, social utilities, or something else which individuals it is advisable to benefit, which to sacrifice. From the strictly economic standpoint, as soon as the community has reached a point P it has to stop. This point [. . .] has been called *point of maximum ophelimity FOR the community*. But, as usual, nothing is to be inferred from the etymologies of those terms.“ (*Treatise*, § 2128, § 2129)

While in principle all sorts of utilities can be postulated, from an *economic* point of view this is a rather futile exercise, if they cannot be unambiguously identified and given potential explanatory and predictive content. This is why, although the maximum ophelimity *for* a particular community can be identified, the maximum ophelimity of this community, the maximum point of social welfare in our contemporary language, *cannot* be determined. The ophelimities of the different members of this community are heterogenous, and, hence, they cannot be compared.

“And precisely because they cannot be compared, [. . .] no maximum ophelimity *of* the community exists; whereas a maximum ophelimity *for* the community can exist, since it is determined independently of any comparison between the ophelimities of different individuals.“ (*Treatise*, § 2130)

This does not imply, of course, that interpersonal comparisons of utilities were not actually made. A government in determining the policy of a community can be described as assigning weights to the utilities, as it perceives them, of the different members of this collectivity (§ 2132). And when going beyond the boundaries of political economy as delineated by Pareto, utilities (but not ophelimities) can be properly assigned to communities apart from their members. Therefore, in sociology the maximum of utility for a community and the maximum utility of the community both exist and are to be distinguished. To conclude: utility is defined as the more general notion, referring to individuals and collectivities as well as to direct, indirect and relative satisfactions. Ophelimity, in contrast, is a specific notion of utility, referring to direct (marginal) satisfactions as experienced by an individual. Therefore, we can observe ophelimity maxima *of* individuals but, in the case of collectivities, there is only the ophelimity maximum *for* a group.

These relationships are depicted in the following table. The more general notion of utility can be rendered more precise in only two cases, which at the same time define the scope of economics. The scope of political economy (economics) is limited to those two categories in which “utility“ can be more precisely defined as “ophelimity.“

Table I: Pareto's Classification of Utilities

Dimension \ Entity	Individual	Collectivity	
		Of	For
Direct	Ophelimity	utility	ophelimity
Indirect	Utility	Utility	
Relative	Utility	Utility	

In sum, Pareto did not give a criterion for economic policy, nor did he assert that ophelimities could be aggregated over different individuals in order to calculate a measure of social welfare.¹¹ Although Pareto did not postulate what has come to be known as his criterion, this does not imply that the principle has to be discarded. The next section is devoted to the examination of the context in which the Pareto criterion was advanced. The historical context might offer some clues for its evaluation from a contemporary point of view.

II. Welfare Propositions in Economics

In 1939, Nicholas Kaldor published a brief note in the *Economic Journal* in which he proposed the Paretian efficiency condition as a criterion to evaluate economic policies without relying on interpersonal comparisons of utilities (Kaldor 1939, 552–3). This criterion has later become to be known as the Kaldor-Hicks Compensation Possibility Test.

Kaldor maintained that the justification of interpersonal comparisons of utility does not determine “whether ‘economics as a science can say anything by way of prescription’” (Kaldor 1939, 549, referring back to Robbins 1938). He illustrated this assertion by reference to a celebrated act of economic policy in British history: the repeal of the corn laws. Arguing in terms of a two-group model and assuming the aggregate money income to remain constant as well as disregarding all secondary effects, he summarized the effects of repealing the corn laws as (1) reducing the price of corn thus rendering the money income to represent a higher real income; and (2) leading to a shift in the distribution of income, favoring the consumers and resulting in a disadvantage to the producers of corn.

“But it is always possible for the Government to ensure that the previous income distribution should be maintained intact. [. . .] In this way, everybody is left as well off as before in his capacity as an income recipient; while everybody is better off than before in his capacity as a consumer.” (Kaldor 1939, 551)

Kaldor obviously differed from Pareto insofar as he was interested in and saw the necessity of developing a theory of economic policy on which advice to policy makers could be based. He remained, however, close to Pareto in his narrow delineation of the scope of economics. He did not require compensation actually to be paid because he saw it as Government's function to determine the desired income distribution (see Kaldor's discussion of the problem, Kaldor 1939, 552–3). Kaldor's approach thus seems to be closer to Wicksell's position than to Pareto's. Taking the operative result of perfect competition as the point of reference, economic advice to policy makers focused on how to achieve these results in the presence of barriers to exchange, given the desired distribution of income as determined by the policy makers. Far from being conservative, this formulation of the principle was not only restrictive, but very restricted¹² in its application of economic theory to the policy problem on the solution of which supposedly advice was sought. It was Hicks who, quite contrary to Pareto, insisted that for the sake of relevance the chains of economic positivism had to be loosened.¹³

“No one will question the activity of our 'positivists' in the criticism of current institutions; but it can hardly be denied that their authority to advance such criticism qua economists is diminished by their abnegation, so that in other hands economic positivism might easily become an excuse for the shirking of life issues, very conducive to the euthanasia of our science.” (Hicks 1939, 696–7)

He took this step, however, in a very cautious way, making sure that “even some of the positivist” (700, with reference, surprisingly enough for the contemporary reader, to Myrdal (1961)) could follow. Pushing Pareto's distinction between ophelimity *of* and *for* a society aside, Hicks maintained that “from any point of view, they [i.e., ‘movements, which benefit some people without damaging others’] represent an increase in economic welfare, or better, an increase in the efficiency of the system as a means of satisfying wants” (701). He then continued to define an *optimum* organization of the economic system in terms of Pareto's maximum of ophelimity (701).

This welfare optimum, for which he developed the familiar marginal and total conditions in the presence of market failure (see also Hicks 1939, ch. VI.), was to be attained by government action, where intervention was “permitted” (as well as expected (see Hicks 1939, 708–9)) to constitute “a reorganization, which will allow a compensation being paid, and which will yet allow a net advantage” (Hicks 1939, 706).

The bulk of the criticism advanced against the Kaldor–Hicks Compensation Possibility Test focuses on the absence of a requirement that compensation is actually paid. The refusal to make such a requirement follows, of course, from the impossibility of making interpersonal comparisons of utilities (of income and wealth), which in turn implies that no economic argument can be made for *any* distribution of income and wealth, the prevailing distribution included.

As an argument of last resort, Hicks also endorsed Edgeworth's speculation that “each party may reflect that, in the long run of various cases, the maximum sum-

total utility corresponds to the maximum individual utility. He cannot expect in the long run of various cases, the maximum sum-total utility corresponds to the maximum individual utility. He cannot expect in the long run to obtain the largest share of the total welfare" (Edgeworth 1925, 102–3. See also Hicks 1940, 111). This presupposes neutrality of the entire set of "permitted reorganizations" with regard to the distribution of income and wealth, a supposition which may not actually be correct and would have to be proven.

A Rawlsian argument (Rawls 1971) could, however, be made to the effect that *behind the veil of ignorance* (with respect to the future position on the Lorenz curve), individuals would opt for the Compensation Possibility Criterion (as amended by Scitovsky¹⁴ and others¹⁵) in the interest of allocative efficiency. Behind the veil of ignorance (applying La Place's principle), one would have to attribute equal probabilities to all net distributions, both positive and negative. Therefore, under these assumptions of a hypothetical situation of decision making, the positive values of allocative improvements would have to be decisive. Also the incidence of these improvements cannot readily be determined. Qualifications to this argument will be further pursued in sections III and V.

Hicks has returned to the subject of how to deal with the problem of economic welfare in two related papers published in the mid-seventies. This offered him the chance to modify his earlier position in the light of the development of economic theory in the interim. According to his present position, welfare economics is essentially an "open-ended subject" (Hicks 1974, 16), a critique of positive economics in the light of prevailing opinions in a society at that particular point in time (Hicks 1975, 326). The term "welfare", to formulate the point somewhat more extremely than Hicks actually did, is a short hand for the expectations of a given society toward the discipline of economics, a reminder not to avoid the pressing although potentially troublesome issues of the contemporary economic situation as well as the economic order which has led to its prevalence. This may sound like a less than satisfactory retreat, but it is a retreat to a sound basis. This basis, again, is the Paretian criterion in its most modest formulation.

At this point of the argument, it may be appropriate to distinguish Pareto-optimal states or positions and Pareto superior changes or movements. To classify an end-state as Pareto optimal means that we are not aware of any Pareto superior movement away from this situation. On the other hand, to claim that a certain situation is *not* Pareto-optimal implies the proposition of such a superior move (see also Buchanan 1962).

A Pareto desirable movement may not imply attainment of improvements in social or economic welfare, but the point of maximum welfare has by necessity not been reached if such a movement is still possible. Reaching a Pareto optimum in the Kaldor-Hicks formulation is a necessary, but not sufficient, condition for a welfare optimum. It is, however, only necessary insofar as the proposed "permitted reorganization" has actually been implemented by the policy makers. This is the difference between the purely descriptive notion of an ophelimity maximum and the Kaldor-Hicks formulation of the Pareto optimum, which implies that the political

process which determines economic policy can, with due advice from economists, determine what "welfare" means in a given situation for a particular society.

If an economic optimum is conceived as the point of best satisfaction of the wants of the consumer (disregarding differences between single consumers with naturally heterogeneous wants, of course), all the possibilities for Pareto desirable moves must have been exhausted, which also implies that the introduction of further commodities into the mix of production in an economy should not represent such a further move.

Although the concept of economic welfare is potentially troublesome and theoretically misleading, it cannot (according to Hicks) be avoided altogether. Advice on economic policy has to follow at least some orientation, and the public for which this advice is sought is interested in its own welfare, which it expects to be furthered with the help of economic advice. Therefore, economists can hardly avoid taking "social welfare" into account in specifying its meaning in their analysis and theory.

The general public in what has been said up to now has appeared as a rather diffuse entity. It is not diffuse, however. There are aspects of the polity which lend itself to economic analysis, in which, the Pareto principle can play a crucial role. Economics has changed its scope since the days when Pareto wrote. His rather general reference to "ethics, social utilities, or something else" (*Treatise*, § 2129) can now be formulated more precisely. The scope of economics can be redesigned and although "the part [of the income] taken by the public authority is spent according to other rules" (*Manual*, VI, § 30), the public sector can now, nevertheless, be included into economic analysis without altering the basic methodological framework. This is the subject matter of the next section.

III. Collective Decisions

Under perfect competition, an ophelimity maximum establishes itself, and there is neither room nor need for any public policy aimed at its attainment. In the presence of market failures, e.g., barriers to exchange in foreign trade or Pigouvian externalities, the economists who formulated the then "New Welfare Economics" assigned the function of simulating the outcome of competition by means of political action to the political executives. Whether the political executive can reasonably be expected to actually perform this function in the prescribed way has increasingly become to be regarded as an open question. This is why, for considerations of economic policy, economic analysis cannot stop where Pareto wanted it to respect its limits. There are various problems intertwined and I shall try to deal with them separately.

First, it is doubtful whether market processes can be simulated by political processes, because the structures of decision making of both processes are distinctly different, in particular the way in which individual decisions are aggregated so as to become a collective decision. Since the Pareto principle was derived from the

observation of collective decision making in the market, the collective decision being a result of the individual (independent) moves, one would have to demonstrate separately for (particular) political processes that an equilibrium can be reached which has the Paretian properties and that this equilibrium is a desired outcome¹⁶.

Secondly, and this may at first glance seem to be paradoxical, the Pareto criterion as a normative criterion has to be invoked precisely because under certain circumstances individual action under perfect competition does not lead to desired outcomes¹⁷. Here, the Pareto criterion serves as a criterion for designing an auxiliary organization which provides (guarantees) the conditions for the market to generate the desired outcome. Also involved, again, is the problem of the scope of economics, here more precisely as the scope of the operation of alternative (partly complementary and partly mutually exclusive) decision making processes. I shall begin dealing with the second question first, then turn to the third and finally return to the first.

Economic Rationale for the Existence of the State. The basis of the economic theory of the state, i.e., the rationale for the existence of the state, can be deduced from the Pareto criterion. This can be illustrated with reference to a game theoretic constellation, which has become to be known as the "prisoner's dilemma."¹⁸

Consider a group, for the sake of simplicity, two individuals I and II, involved in a choice between either living in anarchy or forming a society by establishing and respecting an order of rules (i.e., a constitution), which will serve as a frame of reference for any individual action thereafter. If an order is established, there are potential gains for all individuals as long as it is respected unanimously without exception. However, a person who violates the rules while the other does not, can reap additional benefits at the expense of the other. In this case, the other person is better off not entering the agreement at all and preferring the state of anarchy. In this situation, however, resources for final satisfactions are fewer, due to the insecurity of the anarchic situation. The basic problem involved in this choice is shown in Table II.

The weights for α and β are assigned in the range given by the inequalities. Any particular assignment of weights reflects the basic dilemma and the likely absence

Table II: The Evolution of Society¹⁹

	II	
I	Peaceful Work	Aggression and Defense
Peaceful Work	A α_{11}, β_{11}	B α_{12}, β_{12}
Aggression and Defense	D α_{21}, β_{21}	C α_{22}, β_{22}

$$\alpha_{21} > \alpha_{11} > \alpha_{22} > \alpha_{12}$$

$$\beta_{12} > \beta_{11} > \beta_{22} > \beta_{21}$$

of symmetry. Two outcomes deserve particular interest, A (a_{11}, β_{11}) and C (a_{22}, β_{22}). A is obviously superior to B, but it is an inherently unstable solution. Still, it is not certain that C has to be the outcome. The more often the situation occurs and the more frequently the game is repeated, the more likely it becomes that the superior solution will result from individually optimal strategies.²⁰

In the stylized game theoretic situation, attainment of the socially superior solution requires an understanding of the players that, for their common interest, either partner should refrain from playing the socially sub-optimal strategy. In reality, it can be observed that such an understanding indeed develops.²¹ We observe rules which govern individual behavior, and we observe a general agreement insuring that the rules are observed. Again, as in Pareto's definition of the competitive equilibrium, in which an ophelimity maximum is established, we can refer empirically to the criterion as describing what individuals do for their own satisfaction: The superiority of solution A over C is not a value judgement imposed on reality. It is a principle derived from the analyses of reality, and its application in economic policy is therefore not alien to the subject.

The "obvious" superiority claimed a few sentences above and subsequently explained is "obvious" indeed if one is prepared to accept the following three propositions:

- 1) Superiority depends on the revealed (or revealable) preferences of the individuals in a collectivity.
- 2) It is a positive function of these preferences.
- 3) The preferences of all the members of the collectivity have to be taken into account without exception (see Hennipman 1976).

If these implications are accepted, the acceptance and institution of a social order follows as Pareto superior in those cases in which the inferior equilibrium otherwise would prevail.

This order has to be binding for everybody; individual moves away from the superior equilibrium, by which an individual can reap extra benefits at the expense of other members of this society, are no longer permitted. The establishment of an order to guarantee the superior equilibrium implies that an agency may be established which can effectively prevent individuals (or groups) in a society from leaving the social optimum, since it is the certainty that these moves will not occur which is the sufficient condition for the stability of the order. This is the economic rationale for the existence of the state as well as, more generally, for the production of collective goods²².

Qualifications. In order to avoid misinterpretations it should be pointed out that this is not a justification for any particular state organization, more specifically, it is not a justification for the kind of state organization which we can observe. The "agency" which guarantees the social order can, in the extreme, be a decentralized mechanism of private enforcement (for this concept, see for instance Becker/Stigler (1974) and Landes/Posner (1975)). Collective goods can to a certain extent

be privately produced (see originally Thompson (1968)). Still, in principle a case can be made for the superior efficiency of a centralized agency, at least as a guarantee of last resort, in case decentralized conflict resolutions fail. The possible invocation of the centralized authority will, in general, prevent the decentralized conflict resolution from failing.

The argument for the Pareto superiority of a collective order over the anarchy of individuals comprises two different levels. First, it is an argument for the establishment of an order with binding rules, guaranteed by an agency with coercive powers strong enough to override potentially any fraction of free-riding individuals or groups in the society. This is commonly referred to as the rule of law guaranteed by the state, in part through the use of its monopoly of violence or coercion. Secondly, however, the "law" is a very special collective good in that it provides the structure in which production as well as exchange of both private and public goods can take place. This is the aspect of the "law as public capital" (Buchanan 1975, ch. 7).

The extension of the Paretian principle to an argument for the establishment of a collective order radically changes the scope of economics. In this formulation, the criterion goes beyond the Kaldor-Hicks test (with its respective amendments). The criterion in this formulation establishes the welfare foundation of the state as an organization to guarantee economic order, whereas the Kaldor-Hicks criterion *presupposed* the existence of the state. The "New Welfare Economics" assigned the right to decide ultimately on the social optimality of some policy to the state authority which had sought its advice, not questioning the processes of decision making of this authority and not subjecting the state itself to economic analysis. In particular, there was no attempt to analyze in which way economic proposals would typically be modified, which factors determined the decision to implement or not and in which areas of economic policy advice could be typically expected to be sought. Upon this analysis, however, would hinge the reasonability of the assumption, that

"there would be a strong probability that almost all [inhabitants] would be better off after the lapse of a sufficient length of time [if] the economic activities of a community were organized on the principle of making no alterations in the organization of production which were not improvements [. . .] and making all the alterations which were improvements." (Hicks 1940, 111)

In contrast, the theory of collective goods, initiated by Wicksell (1896)²³ and Lindahl (1890)²⁴ as well as Samuelson (1945) and finally extended into the theory of public choice (see Mueller 1979), uses the Paretian principle as the point of reference for the analysis of political processes of decision making and the evaluation of the results (outcomes or 'products') of political organization. It is in this evaluation where the Paretian criterion gains normative strength in the sense of providing a reservoir of critique and proposals for institutional reform. The yardstick for this critique is efficiency, as defined by the Paretian criterion, and is quite different from a popular assumption which equates the concept of efficiency with the restricted attention to material wants. The redefinition of the scope of economics

according to the Paretian analysis of collective organization also includes, of course, a redefinition of the kinds of goods to be taken into account, in fact including everything which provides individuals with satisfaction.

Some critics have mistaken economists' reliance on the Pareto criterion in their analysis of the policy as implying that the Pareto criterion is the appropriate decision rule in the polity (Rae 1975). This confuses two levels of argument. On the one hand, the organization of a collectivity as well as any particular policy should, according to the Paretian principle, be designed so that *conceivably, in principle*, there should be a unanimous agreement on the proposal. This however does not imply that the rule of unanimity could be a practical rule of decision making.²⁵ There is no contradiction between the postulate of a constitution which could be unanimously agreed upon in the hypothetical situation of a group of individuals deciding to form a society, and this constitution providing for the rule of majority voting as the common rule of decision making in that society.²⁶ Decision making is not a costless activity in itself, it absorbs resources which then cannot satisfy other wants. Also, in reality, the time dimension has to be taken into account. Societies undergo historical development, old members die and new members enter, the environment changes and it cannot be presupposed that the status quo itself could attract unanimous agreement.

When agreeing in any hypothetical situation of constitutional choice, to submit themselves to binding rules enforced by an agency powerful enough to override individual action, individuals face the paradox of being governed. And the choice entails a certain risk that over time the agreed upon authority will override individual action *not* harmful to the collectivity, and will not override individual action which is. And the authority itself may violate the rules of the society. This being the case, the Paretian principle does not serve as a theory legitimizing particular forms of political organization, it only establishes the superiority of a collective order as such. To the contrary, it prompts critical analysis of political organization leading to the design of policy-proposals which are hard to reject. In this light, can the principle be regarded as a 'conservative' rule? This question will be dealt with in the following section.

IV. Value, Power, and Changes

The argument that the Pareto criterion is a conservative policy rule has recently and very extensively been put forward by Warren Samuels.²⁷ He summarizes his point as follows:

"Yet the upshot of all this is gross ambiguity, for the Pareto criterion, which glorifies the consensual and no-loss requirements, also accepts and indeed reinforces non-Pareto optimal change originating outside of its domain in the broad choice and power processes of mutual coercion both in the market and elsewhere. *The Pareto criterion is used selectively to rationalize certain seemingly consensual, no-loss activities and to oppose other activity.* [...] It functions conservatively in support of selected interest, in support of individual acts of market coercion, in support of the market and to limit change of the law." (Samuels 1972, 102–3; original italics)

There are three different facets to this argument. First, Samuels seems to attribute rather broad welfare characteristics to the principle. This becomes obvious when he turns the description of the limited welfare implications of Pareto optimal moves into a criticism of the principle.

“Pareto optimal transactions are only chosen adjustments within the opportunity set structure accorded by the status quo structure of power or mutual coercion, and the forbearance of others.” (Samuels 1972, 81)

In this quote, what really needs to be explained is the qualification “only”, which turns the otherwise correct statement of fact into a criticism. The point of reference to this criticism is the assumption that the Pareto principle can serve as an indicator of general, absolute welfare. This becomes more obvious in the following sentence, quoted from the same article.²⁸

“A paradigmatic and revealing, and only seemingly extreme example of the ‘voluntarist’ argument is the case involving the assumption that political mobility (the option to choose [. . .] emigration) with the inference that if one elects not to emigrate (and thereby accepts the domestic situation) then that individual is satisfied, ergo in a Pareto optimum situation.” (79)

Such an argument as the one criticised by Samuels could indeed only be made if the barriers to emigration were insubstantial.²⁹ Still, the Pareto optimum situation could only be shown to be one relative optimum out of many; “satisfaction” in this context cannot be interpreted as meaning “saturation”, as in the sentence quoted.

Secondly, a related criticism emphasizes that the constraints of individual choice, the rules governing the intersection of individuals and the initial distribution, are themselves an object of power (Samuels 1974, 87) and the end result of power play (82). In a broader context, like in Pareto’s sociology, the distribution of power could, of course, be treated like the distribution of income and wealth, and the determination of rules and moral codes would be integrated into the analysis. In this case, however, the criterion cannot be invoked for the determination of an optimum situation, since there is no *ophelimity maximum of a collectivity* (see *supra* section I).

A third facet of that criticism arguing against the “conservative bias” of the Paretian criterion is the proposition that the principle, as a policy rule, is a limit to social change.

“What the Pareto criterion does is to build in, cast luster upon, and support the status quo power structure, rights structure, opportunity set structure, and so on. [. . .] Its ultimate normative function is to limit change.” (Samuels 1974, 99)

This argument has long ago been rejected, in this author’s opinion, in Ragnar Frisch’s 1950 paper on Pareto regions. As he put it,

“The Pareto principle is a principle of *negation*, not one of *affirmation*. It states that if a point is *not* Pareto optimal, then it cannot be said to be ‘good’ or ‘efficient’. [. . .] To adopt this principle is, of course, by no means the same as to say that any ‘initial’ point which we have happened to run across and which we find on scrutiny to be Pareto optimal is a point from which we should not depart. Many other points may, of course, also have the property of being Pareto optimal.” (Frisch 1950, 44)

The non-singularity of a Pareto optimum does not, however, imply that resort must be taken to some “social welfare function”.³⁰ A social welfare function presupposes knowledge which is generally neither available nor necessary as long as there are processes of decision making in which individuals can participate and reveal their preferences in order to seek satisfaction of their wants (Buchanan 1959, sect. II). Under these conditions, the economist’s role as an advisor to political decision makers reduces to designing Pareto optimal movements (policies) which, if the design of such a movement and the preceding analysis of the conditions of the implementation of the proposed policy were correct, should in general be found to be agreed to and carried out. Thus, economic policy can be a strictly positive discipline, policy proposals being like ‘hypotheses’ submitted to the ‘tests’ of the reality of social processes of decision making (Buchanan 1959, 127). In this context, preoccupation with the “missing” compensation requirement in the Kaldor-Hicks principle becomes unimportant, since imposed redistributions are unlikely to occur. This, of course, presupposes that the social processes of decision making such as the market, competition of candidates in elections, voting in representative bodies, etc., do not fail or that the failure can be overcome.

This is where the second aspect of economic policy as a positive discipline becomes important for the analysis and scrutiny of processes of decision making resulting in theories of process failure. Is it conceivable that the “Anatomy of Market Failure” (Bator 1958) could have been studied without reference to the Paretian principle?

Apart from analyzing these processes, positive economic policy based on the Pareto principle can be said to be ‘conservative’ only insofar as it remains within the confines of social processes of decision making, i.e., within the confines of the constitution of a collectivity. On the other hand, the continuous search for Pareto optimal moves is a constant urge, for change. Thus, positive economic policy may even be regarded as much less ‘conservative’ than some Utopian theory which generates proposals which have no chance of ever being accepted. The only starting point of economic policy is the status quo. Utopian theories which are based on disregarding this simple truism are doomed to fail in stimulating social change. Such Utopian theories will, indeed, function to limit change, restoring the status quo. This argument, however, does not apply if the absence of reform is intended to destabilize a society in the long run in order to provoke revolutionary change.

In a related way, the Pareto principle has been attacked by practitioners of moral philosophy for its lack of legitimacy. The impossibility of comparing utilities inter-individually in an economical meaningful sense is, in this view, insufficient reason for entirely refraining from such evaluations. This point was recently ad-

vanced again by Rescher who stated: "The moral philosopher must be prepared to evaluate utilities — he cannot take them at face value. For him, the crucial point is what is utility augmenting may nevertheless prove to be ethically invalid." (Rescher 1979, 176)

This statement is absolutely compatible with Pareto's own assessment. If moral philosophers dispose of ethical principles which they think to contain sufficient reason for overriding individual preferences, in view of these principles the legitimacy of the Pareto principle will be limited. Other principles, however, lack the peculiar strength of the Pareto principle both in terms of its positive empirical content as well as its relevance. Solutions which can be taken by consensual decisions are most likely to be adopted. Relatedly, the use of coercion in order to implement some ethical principle which cannot be put into practice by consensual decision taking may be ethically debatable too.

In the last decade, the Pareto principle has come to be criticized from still another ideological corner. Instead of, or according to some authors in addition to, charging the principle as being fraught with some 'conservative bias', a more recent argument postulates an incompatibility between the Paretian principle and liberal values. This criticism is the subject of the final section.

V. The Conflict of the Paretian and the Liberal Principle

In his article entitled "The Impossibility of a Paretian Liberal",³¹ Amartya Sen set out to prove that in social decisions, even a very weak notion of individual liberty is incompatible with the Paretian principle. If this were the case, the implications would indeed be "disturbing" for both the theory as well as the practice of social choice. But upon closer inspection, it seems (at least to this author) that the clash between the two principles is not really earth shaking, if relevant at all. In particular, there is certainly no conflict between the Paretian principle in its original form and the proposed formulations of the Principle of Liberal Value. Secondly, the incompatibility is less between the Paretian and the Liberal Principle than between the Paretian principle and a third principle, which Sen introduced as the "Principle of Unrestricted Domain" and which might more aptly be termed the "Principle of the Collective Character of all Individual Choice". This principle is at odds with the Principle of Liberal Values, which serves to restrict the "Unrestricted Domain".

In what follows, I first reproduce Sen's argument, secondly try to clarify it, and then proceed to refer to the major criticisms made. I shall finally try to reconcile the inconsistencies postulated, first by reference to some contemporary philosophical discussion outside economics, and secondly in terms of a distinction between constitutional and restricted choice.

Sen's Argument. Since there is no doubt that Sen's formal proof is correct, it suffices to reproduce the definition he chose for the four principles proven to be in conflict and the illustration he gave. The conditions are

Condition U (Unrestricted Domain): Every logically possible set of individual orderings is included in the domain of the collective choice rule.

Condition P: If every individual prefers any alternative x to another alternative y, then society must prefer x to y.

Condition L (Liberalism): For each individual i, there is at least one pair of alternatives, say (x,y), such that if this individual prefers x to y, then society should prefer x to y, and if this individual prefers y to x, then society should prefer y to x.

Condition L* (Minimal Liberalism): There are at least two individuals such that for each to them there is at least one pair of alternatives over which he is decisive, that is, there is a pair of x, y, such that if he prefers x (respectively y) to y (respectively x), then society should prefer x (respectively y) to y (respectively x). (see Sen 1970 a, 153 f.)

The problem is one of interdependent utilities. The formal proof can be interpreted as referring either to the familiar case of *technical* externalities or to *subjective* externalities. Since in his illustrations Sen prefers the second interpretation, I do the same in criticizing his contribution. The example given deals with an attempt of censorship in a two-person society. There is one book (Lady Chatterly's Lover by D. H. Lawrence) in dispute, and *in principle* there are four elementary outcomes as well as four combined ones:

Table III: The Dispute Over "Lady Chatterly's Lover"

person action	I	II
reads	X	Y
reads not	Z	W

In order to concentrate on social states, these outcomes could be combined and the entire set of social states would accordingly comprise eight elements.

$$X, Y, Z, W; X \wedge Y, X \wedge W, Y \wedge Z, Z \wedge W.$$

In contrast, Sen's example deals with censorship imposed by Mister I. Mister II is not indifferent to I's reading either and tries to react. This reduces the set of possible choices. The choices are between:

$$\begin{array}{ll} \text{I reads and II does not: } & x \quad [X \wedge W] \\ \text{II reads and I does not: } & y \quad [Y \wedge Z] \\ \text{Neither I or II reads : } & z \quad [Z \wedge W] \end{array}$$

Characteristically, the outcome (X \wedge Y) has been excluded.

"Person I, who is a prude, prefers most that no one reads it [i.e., Lady Chatterly's Lover], but given the choice between either of the two reading it, he would prefer that he read it himself rather than expose gullible Mr. II to the influences of Lawrence. Prudes, I am told, tend to prefer to be censors rather than being censored. In decreasing order of preference, his ranking is z, x, y. Person II, however, prefers that either of them should read it rather than neither.

Furthermore, he takes delight in the thought that prudish Mr. I may have to read Lawrence, and his first preference is that Person I should read it, next best that he himself should read it, and worst that neither should. His ranking is, therefore, x, y, z." (Sen 1970 a, 155)

The constellation has no solution, since any solution, given L and P, can be bettered by another one.

Evaluation. Sen's discussion relies on the conception of a collectivist society, which does not operate through the assignment of exclusive alternatives of action to individuals (i.e., the assignment of private property rights); and there is no expectation that individuals, through trade or political consensus, may arrive at social decisions. Instead, any decision is a collective decision. The rights assigned are public property rights, rights to determine social states. The question, e.g., who *owns* Lady Chatterly's Lover, is not relevant in the example. But it would be relevant in practice and it would lead to a stable outcome.

Given this conception, the Pareto principle in its original formulation cannot be applied since it is defined only for ophelimities and does not cover comparisons of the utilities which in turn are attributed by some individual regarding the satisfaction of another. Reliance on the condition of unrestricted domain is appropriate in the analysis of collective choice (Sen 1970 b, Chapter 6.6). But in the context of Sen's analysis, it is in dispute *because* traditionally the philosophy of liberalism has served to *delineate* the domains of private and collective choice.³²

Critique. As could be expected, the criticism of Sen's paper centered around the notion of liberalism he chose. Hillinger and Lapham (1971) questioned his notion of liberalism, but this comment was dismissed by Sen (1971) as a definitional quarrel. The more interesting critique by Ng (1971) left Sen to remain silent. Ng pointed out that

"In terms of Sen's conditions, this means that whenever Condition L is applicable, Condition U is generally not applicable. Where individual I is given decisive power over x and y, other individuals are not likely to prefer strongly y over x (or vice versa). Thus, the preference pattern ($y > z > w > x$) of individual II in Sen's proof is not likely to happen, given that individual I is decisive over z, y."³³

Peter Bernholz (1974; 1975) also asked whether the problem posed by Sen might be a frequent one in practice, quoting cases in which it would not occur, and he proposed to resort to other rules of decision making different from the Paretian principle in the cases of Sen's conflict of principles. He did not, however, question the relevance of Sen's arguments. Seidl (1975) and, more interestingly, Breyer (1977), have tried to overcome Sen's conflict of principles by exploring conditions of *technical* separability of the conflicting (interdependent) utilities derived from individual action. Gibbard (1974) explicitly dealt with the consequences of the assignment of property rights when utilities are interdependent. He analyzed the characteristics of a mechanism which adjusts *alienable* rights in case of inter-indivi-

dual conflict. A similar approach has been followed by Blau (1975) who postulated 'conditional' rights.

Buchanan – in an unpublished note³⁴ – traces the conflict down to the conflicting assignment of the right to decide on *social* states instead of on individual action. Somewhat along the same lines, Bernholz (1974) questions whether such an assignment of individual prerogatives on social decisions accurately reflects the Principle of Liberalism; and he added that the choice of the appropriate rule of decision making has to be made at the constitutional level. This is parallel to Buchanan's insistence that, before the discussion involving externalities can meaningfully begin, the *starting point* of the individuals' rights distribution has to be defined. The Pareto criterion, of course, remains silent as to which initial distribution might be preferable.

The Principle of Proper Concern. In an attempt to reconcile the Paretian principle with the problem imposed by the presence of interdependent utilities of individuals, a different principle may be invoked. This principle explicitly assigns rights of decision making. It "solves" the problem of the delineation of the domains of private and collective choice, and it also deals with the problem of either insufficient or redundant participation in the processes of decision making. The principle is undisputed in virtually all the differing schools of practical philosophy (see Backhaus (1977, 106) for further references and discussions). The Principle of Proper Concern (Prinzip der Betroffenheit), as opposed to what Sen euphemistically called "nosiness" (Sen 1970 b, ch. 6.6), may be stated as follows:

In a given society, all the individuals whose proper concern is with some issue \uparrow shall participate in the decision on \uparrow . Only those individuals whose proper concern is \uparrow shall participate in the decision on \uparrow .

It is to be expected that Sen would not accept the principle. In discussing Nozick's approach (Nozick 1973), which essentially boils down to the assignment of individual rights, he argued that in deciding matters of "social welfare", one takes an "ethical" view" in terms of "one's own judgement (Sen 1976, 229). This point can be made explicit again by quoting the example given:

"If I have a right to choose to live in New York or Massachusetts, and I choose Massachusetts, then alternatives involving my living in New York are not appropriate objects to be entered in a social ordering." (Nozick 1973, 62) But one can also argue that if I believe that it is a better society which – given other things – lets Nozick decide where he wishes to live, then I must *assert* that it is socially *better* that Nozick should be permitted to live in Massachusetts as chosen by him. If Nozick is forced out of Massachusetts, then one would wish to say not only that Nozick's rights have been violated, but that society is worse off – given other things – by stopping Nozick from living where he wishes." (Sen 1976, 231)

Applying the principle of proper concern, Nozick would end up living in Massachusetts, nothing or nobody forcing him into New York, unless he consented to

such a move. This can be an actual consent or a hypothetical consent on the different level of the constitutional argument.

The principle, which is extremely weak – being the smallest common denominator between many differing schools of thought – presupposes the existence of a common notion of the “proper” concern. The phrasing is, of course, ambiguous. “Proper” may refer to either “individual” or “legitimate”. The principle reflects doubts whether there exist societies for which this principle would, apart from its normative content, not at the same time found to be correct as an empirical description. These doubts are further nourished when Sen’s paradox is discussed in the light of the difference between constitutional choice and restricted choice.

Constitutional Choice and Restricted Choice.

“While the problem cannot be dismissed this way, it can certainly be argued that the eventual guarantee for individual freedom cannot be found in mechanisms of collective choice.” (Sen 1970 b, ch. 6.6)

The statement is correct insofar as a particular mechanism of collective choice cannot generate the delineation of its own domain. Liberalism is a doctrine, one out of various schools of thought with a similar characteristic, which serves to separate the public domain from the private domain. In the confinements of a public domain thus delineated, collective choice can take place. Thus, we have a two-stage process of choice:

1. Constitutional Choice, and
2. Restricted Choice, the constitution chosen in the first step being the restriction in the second.

In either choice, the Paretian principle is important. The constitutional choice of the domain of privacy can be hypothesized in exactly the same way as the constitutional choice of the establishment and institution of the state, of which it is, in fact, only a part. The argument, therefore, follows exactly the same lines as the argument in Section III above, and need not be repeated here. It suffices to illustrate it with Sen’s example. Let us return to *Lady Chatterly’s Lover*.

Again there is a Pareto superior outcome to the dilemma. The superior equilibrium now, in contrast, is one in which an arrangement has been reached which protects individual privacy. All individuals are better off, not being exposed to nosy inquiries and ensuing interferences, and not having to engage in such behavior. Still, there might be some individuals who would like to be more nosy than is permitted now, and others who wish to care less than is polite. But even those persons who are relatively dissatisfied with the current state of affairs would rather prefer this situation of established rules to its relevant alternative: the absence of such rules. This being the case, we have just given the description of a Paretian equilibrium, in which no marginal move is conceivable which would benefit at least one individual without harming another.

In sum, the conflict between the Paretian principle and the Principle of Liberalism seems to be misconstrued, because the principles belong to different categories. The Principle of Liberalism defines individual rights and collective prerogatives. The Paretian principle shows that

1. A definition of individual rights and collective prerogatives is preferable to the absence of such a definition (or order) – but the principle gives no hint as to which definition might be preferable; and
2. it defines optimum situation once individual (or collective) rights are been defined.

This distinction coincides precisely with the scope of economics. Economics as a science remains silent when we have to answer the question of how to define liberalism. Given some definition, however, economists guided by the Paretian principle are able to analyze whether an optimum situation has *not* been arrived at, and, if this is the case, they can propose an improvement.

Concluding Remarks. The Pareto criterion, it has been shown, has developed with the gradual expansion of the scope of economics. It began as the definition of an equilibrium of a situation in which individuals were described to seek directly the satisfaction of their wants, the criterion being a property of the equilibrium. Kaldor and Hicks, pointing to situations in which there were barriers to the attainment of the equilibrium situation as described by Pareto, invoked public policy to follow the criterion in removing these barriers. Quickly, however, they broadened the importance of the principle when extending it into the Compensation Possibility Test.

“Suppose we call (A) those changes which do bring about a gain in this sense, (B) those changes which benefit some and damage others, (C) those which bring about a loss in the corresponding sense, so that some (at least) are damaged and none advantaged. Admittedly it is true that nearly all changes which actually occur will fall into class (B). The classes can, however, be extended by *devising* additional members. We might take a particular (B) change and change and combine it with some ‘redistributional’ measure to offset its primary ‘distributional’ effect. There should be some (B) changes which can be modified in this way to convert them into (A) changes; call them (BA) changes if they are capable of being so modified. It was claimed that (A) + (BA) changes would not be such rare birds.” (Hicks 1975, 309)

At this point, the scrutiny of the market and the final elaboration of the “Anatomy of Market Failure“, building on the work of Pigou set in. It was first taken to define the scope of government’s activity in the economy, an activity for which welfare economics provided the theoretical foundations. The process has not stopped here, however. Once it became obvious that political processes of collective decision making did not stand up to the Pareto principle either, the principle served as the guideline for the analysis of the failure of processes of political decision making. This task being almost completed, the logical next step to follow seems to be the analysis of these processes which determine the domain of the various decision making mechanism: the analysis of constitutional choice, guided, again, by the Paretian principle.

Notes

- 1 Indeed, the motive to write this essay developed from an invitation extended by the editors of the "Historisches Wörterbuch der Philosophie" [Historical Encyclopaedia of Philosophy], Basel/Stuttgart to contribute an article on the Pareto criterion. This paper is the extended and English language version on which this encyclopaedia article will be based.
- 2 This is certainly true as an empirical statement of fact. A philological analysis of economic text could probably show that the Pareto criterion is the concept most often invoked at critical points of analysis. The statement is correct insofar as "normative" economics is concerned. It is, however, possible to construct general equilibrium models without explicit reliance on the Pareto principle. See e.g., Kenneth J. Arrow and Gérard Debreu (1954) and the literature developed thereafter. A recent survey is available by E. Roy Weintraub (1977; 1979). This statement has provoked many criticisms, some of which denied the statement's truth in itself, while others quarrelled with the desirability of its content. For instance, Earl F. Beach in a private letter to the author of October 9, 1978, argues that "as a statement of the nature of current trends in economic theorizing, you are no doubt correct, and this is a sad comment on the trend of economic theorizing". And he continues: "I am now convinced that our interest in value theory has caused us to concentrate on equilibria, on position rather than on continuing change, and thus has put technological change into the background — it is, after all, very inconvenient to the theory of value." In terms of Pareto's own approach, the principle was designed to play a far more limited rôle than corresponds to its current status in economic theory. Pareto, of course, defined the scope of economic theory very narrowly, and for this reason would have dealt with matters of technological change and the change of institutions in his general sociology.
- 3 The Pareto criterion lays down the necessary and sufficient conditions for obtaining the Pareto optimum. The entire concept of the impossibility of a further improvement by marginal moves with its different shades of positive and normative interpretations is here more broadly referred to as the Pareto principle.
- 4 When referring to Pareto's writing, I rely mostly on his *Manual of Political Economy* (first (Italian) edition, 1906, (French) 1909, revised second edition 1927, translated and annotated American edition, 1971), as well as his *Treatise on General Sociology* (first (Italian) edition "Trattato di Sociologia Generale", 1916, American translation under the title of: "The Mind and Society", 1935). The first is henceforth referred to as the "Manual", followed by the indication of chapter and paragraph, and the second as the "Treatise", followed by the paragraph number.
- 5 The first edition of this book appeared in 1912 under the title *Wealth and Welfare*.
- 6 Surprisingly enough, in the 1939 articles by Hicks and Kaldor, there is no reference to Pareto; nor does the reference to Pareto in the 1975 article go beyond what has been quoted above. The maximum ophelimity is defined in the *Manual*, VI, § 33, and the concept has been worked out in more detail in the appendix § 89–100.
- 7 This feature of Pareto's definition of maximum ophelimity prompted some strong criticism by Wicksell. Wicksell charged that Pareto's definition was almost self-evident and that Pareto's doctrine tended "to obscure the effect, which we have already pointed out and which we shall develop, that social production and a free competition (with certain reservations) does really lead to a maximization, in the usual and proper sense, of the means of satisfying human wants" (Wicksell 1934, 834). The quote has been taken from his lecture on *The Gain From Free Exchange*.
- 8 Pareto's delineation of the scope of economics even excluded public economics: "The part of the income which is left to the individuals is spent by them in accordance with their tastes; and its allocation among the various expenditures comes within the theory of equilibrium regarding tastes which we have already given. The part taken by the public authority is spent according to other rules which economic science does not have to study. Economic science should assume that these rules are part of the given data of the problem to be solved." (*Manual* VI, § 30)
- 9 Sociology, according to Pareto's use of language, referred to the attempt to integrate the subject matters of all the social sciences, such as law, political economy, political history, the history of religion, etc. (*Treatise*, § 1); the term did not refer, as it does today, to a specialized discipline separate from political economy.

- 10 An equilibrium being defined as "such a state that if it is artificially subjected to some modification different from the modifications it undergoes normally, a reaction at once takes place tending to restore it to its real, its normal state." (*Treatise*, § 2069)
- 11 Pareto's resistance to attribute any welfare judgement to the maximum of ophelimity had almost immediately attracted strong criticism by Knut Wicksell (1934); it seems to be surprising that even William J. Baumol (1967) after accurately quoting Pareto (which most writers neglect to do) and mentioning Wicksell's criticism nevertheless interprets Pareto's definition in the light of Kaldor's Compensation Possibility Test, instead of referring to Pareto's objections to such an argument.
- 12 This, of course, applies even more to Pareto's formulation, which does not carry any policy implications at all. Taking this into account, what does Tarascio (1969) mean when writing: "What matters here is that Pareto was fully aware of the restrictive nature of the Pareto optimum criterion on welfare and that any discussion involving movements from an optimal point along the contract locus involves noneconomic considerations. In order to deal with such considerations, he developed his utility theory." (8–9)? In order to develop a positive integrated theory of social movements, Pareto developed a complex utility theory, which even had a psychological basis (Theory of Residues) and also comprised a theory of knowledge (Theory of Derivations). Unlike his earlier writings, however, neither the *Manual* nor the *Treatise* did purport to develop a theory of welfare, a task which, although Pareto did not deny its importance, he nevertheless assiduously tried to avoid. Therefore Samuelson's argument that "the most important objection to Pareto's exposition is his lack of emphasis upon the fact that an optimum point, in his sense is not a unique point" (1947) is incorrect as far as Pareto's exposition is concerned. This is the argument to which Tarascio responds in the quote given above.
- 13 For a discussion of how this may be accomplished as a common venture of both economists and practical philosophers, see Backhaus (1977).
- 14 Scitovsky (1941, 77–89) pointed out that the Kaldor-Hicks test actually has to be two-sided: apart from the question, whether a move from A to B satisfies the criterion, it has also to be shown that a move backward from B to A does not. This peculiar constellation can occur when the first move entails an "income effect" strong enough to offset the substitution effects generated by the first move. See also Hicks (1974, 12).
- 15 Little (1977, 96 ff.) further amended the test requiring that, apart from satisfying both the Kaldor-Hicks and Scitovsky requirements, a proposed policy should also conform to the "desired income distribution". This, however, is self evident and redundant, since the "desired income distribution" has to be determined politically. In the same way it has to be decided whether a proposal of economic policy meeting the Kaldor-Hicks test will actually be implemented. Neither of these welfare criteria can be interpreted as being designed to circumvent the processes of political decision making.
- 16 This does not imply that the political process has to be shown to generate decisions essentially in the same way as a market process. See already Coleman (1966) and the ensuing interchange between Park (1967), Mueller (1967) and Coleman (1967).
- 17 Since this is also true for many political processes, the existence of a market failure is no sufficient reason for invoking state authority. The proposition of a Pareto-superior move includes the analysis of its political implementation. The entire movement, proposal plus implementation, has to be shown to contribute a Pareto-superior move. See also *infra*, section IV.
- 18 The name of this game is derived from a popular description: "Two suspects are taken into custody and separated. The district attorney is certain that they are guilty of specific crime, but he does not have adequate evidence to convict them at a trial. He points out to each prisoner that each has two alternatives: to confess to the crime the police are sure they have done, or not to confess. If they both do not confess, then the district attorney states he will book them on some minor trumped-up charge such as petty larceny and illegal possession of a weapon, and they will both receive minor punishment; if they both confess they will be prosecuted, but he will recommend less than the most severe sentence; but if one confesses and the other does not, then the confessor will receive lenient treatment for turning state's evidence whereas the latter will get 'the book' slapped at him." (Luce and Raiffa 1957, 95). For discussion in the context of this essay it is important to consider the crucial assumption of the game. There is no explicit communication between the players,

- but in the long run with the many repetitions they can reveal information and communicate through the choice of their strategies. This is, however, not a necessary condition for this type of game. Even given perfect communication, the situation is such that agreements are not stable as long as they are not guaranteed by some superior authority.
- 19 Table II basically corresponds to Figure 2.1 in Buchanan (1975).
 - 20 This is slightly different from the treatment by Luce and Raiffa (1957) chapter 5.4 and 5.5. They claim that the superior solution will only be obtained if the game is repeated infinitely. See, however, the critique and different interpretation by Badu (1977, 293–298).
 - 21 It can even be an implicit understanding which develops in the long run. In the example of this discussion, the correct interpretation is that there is an infinite number of moves.
 - 22 A (pure) collective good has the characteristic that it can be consumed simultaneously by an infinite number of individuals, and the consumption of the good by one individual does not impose any opportunity costs on any other individual. — One important distinction, however, may be added. Given the presence of the free-rider problem, the state, now becoming an entity of its own, occasionally has to override the revealed preferences of individuals (who try to free-ride) in order to provide collective goods in the interest of the “general will”, i.e., a hypothetical unanimous agreement. This is why and where Leviathan may enter the scene.
 - 23 The chapter on the quasi unanimity rule has been translated into English by James M. Buchanan and been published under the title, *A New Principle of Just Taxation*, in: Musgrave/Peacock (1964, 72–118).
 - 24 Translated as *Just Taxation: a positive solution*, in: Musgrave/Peacock (1964, 168–176).
 - 25 See already the extensive qualification Wicksell made to his argument in terms of practical implications. See Wicksell (1896, 116). For practical reasons, Wicksell allowed simultaneously majorities of 3/4, 5/6, or 9/10 as a reasonable practical implementation of his unanimity rule.
 - 26 See for instance, an interesting proof for the optimality of the majority rule by Rae (1969). The costs of decision making are approximated by probabilities. To the contrary, Buchanan and Tullock provided an argument for the optimality of decision rules with stronger consensual requirements. See James M. Buchanan and Gordon Tullock (1971, particularly ch. 6).
 - 27 Samuels (1972). Since Samuels is intimately aware of Pareto’s writings (see in particular Samuels (1974)), it has to be assumed that he criticised the common use of the Pareto principle, not the principle itself.
 - 28 In the sentence quoted, Samuels refers to Hochman/Rodgers (1970).
 - 29 They can, however, be literally insurmountable, like the Berlin Wall.
 - 30 This has been the approach strongly endorsed by Samuelson (following Bergson) who considered the Kaldor-Hicks approach as ‘misguided’ and erroneous. See Buchanan (1959, 125) with further references (fn. 3 and 4).
 - 31 The debate originated with Sen’s article in the *Journal of Political Economy* (Sen 1970 a). Consequently, two discussions developed, one in the *Journal of Political Economy* and another in *Public Choice*. See Y. K. Ng (1971) and Claude Hillinger/Victoria Lapham (1971). Sen replied to the Hillinger-Lapham comment, but disregarded Ng; Sen (1970 b) chapters 5.2–6.6 and 6*. The interchange in *Public Choice* took place between Sen and Bernholz; Peter Bernholz (1974), Sen (1975) and Bernholz (1975). Also pertinent to the discussion are: Alan T. Peacock/Charles K. Rowley (1972) as well as their recent book, Charles K. Rowley/Alan T. Peacock (1975).
 - 32 This question is separate from the definition of the problem of what exactly to understand by liberalism — a problem which Sen tries to avoid (1970 a, 153, fn 1) and (1971, 1406). Leaving the question of a precise or consensual definition of liberalism aside, there can be no doubt that the notion of liberalism is concerned with the proper delineation of the private and public domain, whereas Sen presupposes a rather wide public domain, softened only by the weak liberal principle, that society should follow individual values in at least one out of its many choices.
 - 33 Ng (1971, 1399). Ng continued arguing somewhat on the same lines as Hillinger and Lapham (1971): “We are not arguing that Sen’s proof is incorrect. Given his interpretation of Liberalism which requires only a decisive power over a pair of alternatives by each individual without restricting the preference pattern of other individuals on this pair — that is, given his Condition L and Condition U — Pareto principle cannot be sustained generally. What we argue is that the spirit of liberalism is not adequately represented by Condition L.”

- 34 See an unpublished draft note by James M. Buchanan, *An Ambiguity in Sen's Alleged Proof of the Impossibility of a Pareto Libertarian*, Center for Study of Public Choice, Virginia Polytechnic Institute and State University, fourth draft, 9/30/76–10/4/76.

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