SOCIAL CHOICE RE-EXAMINED
Volume 2

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Social Choice Re-Examined

Volume 2

**Proceedings of the IEA Conference held at
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Edited by

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and

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The International Economic Association

A non-profit organization with purely scientific aims, the International Economic Association (IEA) was founded in 1950. It is a federation of some sixty national economic associations in all parts of the world. Its basic purpose is the development of economics as an intellectual discipline, recognizing a diversity of problems, systems and values in the world and taking note of methodological diversities.

The IEA has, since its creation, sought to fulfill that purpose by promoting mutual understanding among economists through the organization of scientific meetings and common research programmes, and by means of publications on problems of fundamental as well as of current importance. Deriving from its long concern to assure professional contacts between East and West and North and South, the IEA pays special attention to issues of economics in systemic transition and in the course of development. During its more than forty years of existence, it has organized eighty round-table conferences for specialists on topics ranging from fundamental theories to methods and tools of analysis and major problems of the present-day world. Participation in round tables is at the invitation of a specialist programme committee, but ten triennial World Congresses have regularly attracted the participation of individual economists from all over the world.

The Association is governed by a Council, composed of representatives of all member associations, and by a fifteen-member Executive Committee which is elected by the Council. The Executive Committee (1992–95) at the time of the Berndorf Conference was:

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Sir Austin Robinson was an active Adviser on the publication of IEA conference proceedings from 1954 until his final short illness in 1993.

The Association has also been fortunate in having secured many outstanding economists to serve as President:

Gottfried Haberler (1950–53), Howard S. Ellis (1953–56), Erik Lindahl (1956–59), E. A. G. Robinson (1959–62), G. Ugo Papi (1962–65), Paul A. Samuelson (1965–68), Erik Lundberg (1968–71), Fritz Machlup (1971–74), Edmond Malinvaud (1974–77), Shigeto Tsuru (1977–80), Victor L. Urquidi (1980–83), Kenneth J. Arrow (1983–86), Amartya Sen (1986–89), and Anthony B. Atkinson (1989–92).

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Participation in the Round Table was at the invitation of the Programme Committee comprising:

Kenneth J. Arrow
Amartya Sen
Kotaro Suzumura

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Abbreviations and Acronyms

A	Anonymity
ACA	Arrow's Choice Axiom
CEPREMAP	Centre d'Etudes Prospectives et d'Economie Mathématique Appliquées à la Planification
CERAS	Centre d'Enseignement et de Recherche en Analyse Socio-Economique
CGPC	Conseil Général des Ponts et Chaussées
CNRS	Centre National de la Recherche Scientifique
CT	Cumulative Transitivity
DN	Domain Non-restrictedness
ESWF	Extended Social Welfare Function
GSCR	General Social Choice Rule
GSWF	Generalized Extended Social Welfare Function
HARP	Houthakker's Axiom of Revealed Preference
HE	Hammond Equity
IFP	Institut de Finances Publiques
IIA	Independence of Irrelevant Alternatives
IIF	Independence of Infeasible Alternatives
IMF	International Monetary Fund
INSEE	Institut Nationale de la Statistique et des Etudes Economiques, Paris, France
IWPIA	Independence of Weakly Pareto Irrelevant Alternatives
MB	Minimal Binariness
MIT	Massachusetts Institute of Technology, USA
RM	Resource Monotonicity
S	Suppes Impartiality
SCC	Social Choice Correspondence
SCF	Social Choice Function
SCR	Social Choice Rule
SMC	Sen-Mirkin's Criterion
SP	Strong Pareto Principle
SWF	Social Welfare Function
UFF	Unrestricted Finite Feasible
UP	Unrestricted Preference Domain
UU	Universal Unanimity
WARP	Weak Axiom of Revealed Preference
WP	Weak Pareto

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Kenneth J. Arrow

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Introduction

Kenneth J. Arrow

Human beings live in society. Before the first 'syllable of recorded time', they had to make decisions which bind an entire group. Hunting frequently pitted physically weak men against stronger animals; it was only by agreeing on a division of functions that human hunters could kill or capture mammoths or bisons or elephants or lions. As society became more complex, especially after the development of agriculture, social decisions covered a wider and wider range: the development of irrigation works, the administration of cities, and, of course and alas, the fighting of wars.

Only in relatively few societies, however, did the notion develop that social choices should be made by a relatively large part of the population. No doubt that part was small by modern standards; slaves, women, and, usually, those with little or no property were excluded. But there was a sharp break from the view that the social will was embodied in a single monarch. Nevertheless, the ancient worlds do not seem to have developed any fully articulated views of the relation between the desires and values of individuals and the choices binding on the society.

In the European Middle Ages, with its variety of institutions, each operating in its own sphere, social choice was represented primarily by elections in small institutions, such as monasteries and convents, though there were elective monarchies, most notably the Holy Roman Empire but also Poland and Denmark (the election of Danish kings is a background to *Hamlet*); there were also legislative and judicial institutions. The medieval writers Ramon Lull and Nicolaus Cusanus began the task of evaluating alternative election systems in terms of properties not dissimilar to those in modern social choice theory.

Only with the Age of Enlightenment does there emerge the beginning of a self-conscious formal argumentation as to methods of election or of voting in legislatures, with the work of Jean-Charles de Borda (who had the modest aim of improving elections to the Académie des Sciences of France) and that supreme advocate of the role of reason in human emancipation, the Marquis de Condorcet. It was a period that also saw

rational arguments about the treatment of crime, the bearing of risks, economic policy, and the structure of law.

There were intermittent, discontinuous discussions of election methods in the nineteenth century, notably the paper by E.J. Nanson and the analyses of C.L. Dodgson (better known by his literary pseudonym, Lewis Carroll) circulated only within the confines of Oxford. These and the post World War II efflorescence of social choice theory, following on the papers of Duncan Black and, if I may be excused the reference, the publication of my *Social Choice and Individual Values*, in 1951, are too familiar for repetition. The subject of social choice has grown in many and surprising ways.

The impossibility theorems have suggested many directions for research: mathematical characterizations of voting structures satisfying various sets of conditions, broadening of the informational inputs into social choices, the consequences of restricting choice to certain domains, the relation to competitive equilibrium and the core, and trade-offs among the partial satisfactions of some conditions. The links with classical and modern theories of justice and, in particular, the competing ideas of rights and utilitarianism have shown the power of formal social choice analysis in illuminating the most basic philosophical arguments about the good social life. Finally, the ideals of the just society meet with the play of self interest; social choice mechanisms can lend themselves to manipulation, and the analysis of conditions under which given ideals can be realized under self interest is a political parallel to the welfare economics of the market.

The International Economic Association Round Table on Social Choice had contributions on all these subjects, and they are presented in following volumes. We are grateful to the Austrian Economic Association for its sponsorship of this conference and for Professor Erich Streissler's masterly local arrangements at Schloss Hernstein on 26–28 May 1994.