

**Arrow K J.** *Social choice and individual values.* New York: Wiley, 1951. 99 p.  
[Cowles Commission for Research in Economics, University of Chicago, IL]

The members of a society have preference orderings over the alternatives socially available. If the concept of a social preference is coherent and if it is to be based on the preferences of individuals, then social preference is a function of the individual preferences. It is shown that no such function satisfying certain natural conditions exists. [The *SCI*® and *SSCI*® indicate that this book has been cited in over 1,450 publications since 1955.]

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The question posed in social choice theory flows inexorably from standard thinking about the nature of choice in economic and political contexts. Partial accounts go back 170 years. At any time, the general possibility of social choice mechanisms could have been formulated and answered. Yet, no one had raised the issue in just that form, and very possibly no one would have for many years to come.

In spite of the novelty, the congruence with standard thinking on rational choice was so obvious that the relevance of social choice theory was quickly accepted. There were, of course, severe criticisms, giving different interpretations, but they engaged my ideas as legitimate alternatives.

Biographical accidents had a role in the origins of social choice theory. One was the appointment of Alfred Tarski to the faculty of City College (in New York) in my senior year. This resulted from the conjunction of two chance events: Bertrand Russell, appointed as professor of philosophy, was denied his chair by a judge on grounds of immorality, and Tarski, in New York for a conference, was

trapped there by the outbreak of World War II. I took a course from Tarski in the logic of relations, and this gave me both an interest and a technical vocabulary.

From Harold Hotelling, I learned the ordinalist interpretation of consumer preference, that is, it is meaningful to ask if one alternative is preferred to another but not by how much. It was trivial enough to restate preference maps as relations, satisfying the conditions of transitivity and completeness. A few years later, I started on a thesis, one component of which was the analysis of a multiowner firm. I found an interesting problem with the making of investment decisions. Even though all the owners were made better off by maximizing the profits of the firm, they might well have different expectations of the future and therefore different judgments about investment projects. If choice between two different investment patterns followed the preferences of a (share-weighted) majority of the investors, then, as I soon saw, an intransitivity (a circularity in preferences) was possible. I put the issue aside as distracting from my main aims and as surely being well known.

The problematic nature of social ordering flickered several more times, to be disregarded each time, until the summer of 1948, which I spent at the RAND Corporation. The US Air Force was supporting research on game theory as a potential tool for analysis of military and foreign policy. One of the staff, Olaf Helmer, asked me how nations, which are collectivities, not individuals, could be regarded as having utility functions, as demanded by the theory of games. In an attempt to explain the answers of welfare economics, I realized that, from an ordinalist viewpoint, the problem was much the same as that of voting; and, in a few days, I worked out the impossibility of a general solution.

One could hardly ask for a more gratifying reception. The field of social choice continues to develop<sup>1,2</sup> and has a journal, *Social Choice and Welfare*, devoted to it. The best current survey of the field is that of A.K. Sen, cited below.<sup>3</sup>

1. Kelly J.S. *Arrow impossibility theorems.* New York: Academic Press, 1978. 194 p. (Cited 50 times.)

2. Pattanaik P K & Salles M S, eds. *Social choice and welfare.* Amsterdam, The Netherlands: North-Holland, 1983. 323 p.

3. Sen A K. Social choice theory. (Arrow K J & Intriligator M, eds.) *Handbook of mathematical economics.* Amsterdam, The Netherlands: North-Holland, 1986. Vol. 3. p. 1072-181. (Cited 10 times.)