

**Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparison of Utility: Comment**



Peter A. Diamond

*The Journal of Political Economy*, Volume 75, Issue 5 (Oct., 1967), 765-766.

---

Your use of the JSTOR database indicates your acceptance of JSTOR's Terms and Conditions of Use. A copy of JSTOR's Terms and Conditions of Use is available at <http://www.jstor.ac.uk/about/terms.html>, by contacting JSTOR at [jstor@midas.ac.uk](mailto:jstor@midas.ac.uk), or by calling JSTOR at 0161 275 7919 or (FAX) 0161 275 6040. No part of a JSTOR transmission may be copied, downloaded, stored, further transmitted, transferred, distributed, altered, or otherwise used, in any form or by any means, except: (1) one stored electronic and one paper copy of any article solely for your personal, non-commercial use, or (2) with prior written permission of JSTOR and the publisher of the article or other text.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

*The Journal of Political Economy* is published by University of Chicago. Please contact the publisher for further permissions regarding the use of this work. Publisher contact information may be obtained at <http://www.jstor.ac.uk/journals/ucpress.html>.

---

*The Journal of Political Economy*  
©1967 University of Chicago

JSTOR and the JSTOR logo are trademarks of JSTOR, and are Registered in the U.S. Patent and Trademark Office. For more information on JSTOR contact [jstor@midas.ac.uk](mailto:jstor@midas.ac.uk).

©1998 JSTOR

CARDINAL WELFARE, INDIVIDUALISTIC ETHICS, AND INTERPERSONAL  
COMPARISON OF UTILITY: COMMENT

PETER A. DIAMOND

Massachusetts Institute of Technology

NOT very recently, Professor John Harsanyi (1955) presented in this *Journal* three appealing axioms for social choice under uncertainty which lead to the conclusion of a social welfare function which is additive in individual utilities. While not directly addressing his defense of these axioms, I wish to argue that one of them is not consistent with notions of justice held by some individuals.<sup>1</sup> Since this is an ethical discussion, the argument will take the form of an example which suggests the problem inherent in the axiom and some comments on the nature of the example.

Harsanyi's three axioms are: (1) individual decision making satisfies the axioms for expected utility maximization; (2) social welfare can be written as an increasing function of individual expected utilities; and (3) social choice satisfies the axioms for expected utility maximization. It is the third axiom with which I wish to quarrel.

In mathematical terms, we can express the first axiom as individual choice conforms to the maximization of expected utility,  $v_i$ , where

$$v_i = \int u_i [c_i(\theta)] dF(\theta), \quad (1)$$

with  $u_i$  being the utility function of the  $i$ th individual;  $c_i(\theta)$ , his consumption in state  $\theta$ ; and  $F(\theta)$  the probability distribution of the states of nature.

The second axiom is that social choice should conform to the maximization of

<sup>1</sup> This comment is also relevant for part of the Robert H. Strotz paper (1958). For further discussion of these matters, see also Franklin M. Fisher and Jerome Rothenberg (1961, 1962) and Strotz (1961).

welfare,  $w$ , which can be written as a function of individual expected utilities:

$$w_1 = f_1 (v_1, v_2, \dots, v_n). \quad (2)$$

This axiom implies that social choice can be expressed as a choice among vectors of expected utilities, which are determinate, not random, and thus social choice under uncertainty need not be considered.

The third axiom says that the social objective function can be written as expected welfare (with welfare a function of individual utilities):

$$w_2 = \int f_2 \{ u_1 [c_1(\theta)], \dots, u_n [c_n(\theta)] \} dF(\theta). \quad (3)$$

These three axioms imply that welfare can be written additively,

$$w = \sum_{i=1}^n \lambda_i \int u_i [c_i(\theta)] dF(\theta). \quad (4)$$

(In the presence of differing individual subjective probabilities, a case not considered by Harsanyi, these three axioms are inconsistent.)

As an example, let us consider a society composed of two identical individuals,  $A$  and  $B$ , facing a choice between two alternatives,  $\alpha$  and  $\beta$ , with two possible and equally probable states of nature,  $\theta_1$  and  $\theta_2$ . Let us further assume that social choice, in addition to satisfying the first two axioms above, is symmetric in its treatment of the two individuals. It is assumed that under alternative  $\alpha$ , the utility of  $A$  is 1 and that of  $B$  is zero, independent of the state of nature; while under  $\beta$ , these are the utility levels if  $\theta_1$  occurs, but they are reversed if  $\theta_2$  occurs. In tabular form, we have

	if $\theta_1$ occurs	if $\theta_2$ occurs
Alternative $\alpha$ :	$u_A = 1, u_B = 0,$	$u_A = 1, u_B = 0,$
Alternative $\beta$ :	$u_A = 1, u_B = 0,$	$u_A = 0, u_B = 1.$

Harsanyi's third axiom, in combination with the other assumptions, leaves society indifferent between the two alternatives. However,  $\beta$  seems strictly preferable to me, since it gives  $B$  a fair shake while  $\alpha$  does not. (In terms of expected utilities, under  $\alpha$  we have  $v_A = 1$  and  $v_B = 0$  while under  $\beta$ ,

$$v_A = v_B = \frac{1}{2}.)$$

I am willing to accept the sure-thing principle for individual choice but not for social choice, since it seems reasonable for the individual to be concerned solely with final states while society is also interested in the process of choice.

#### REFERENCES

- Fisher, Franklin M., and Rothenberg, Jerome. "How Income Ought To Be Distributed: Paradox Lost," *J.P.E.*, LXIX (April, 1961), 162-80.
- . "How Income Ought To Be Distributed: Paradox Enow," *ibid.*, LXX (February, 1962), 88-93.
- Harsanyi, John. "Cardinal Welfare, Individualistic Ethics, and Interpersonal Comparisons of Utility," *J.P.E.*, LXIII (August, 1955), 320.
- Strotz, Robert H. "How Income Ought To Be Distributed: A Paradox in Distributive Ethics," *J.P.E.*, LXVI (June, 1958), 189-205.
- . "How Income Ought To Be Distributed: Paradox Regained," *ibid.*, LXIX (June, 1961), 271-78.