

BLACK, DUNCAN (1908-1991)

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Born on 23 May 1908 in Motherwell, Scotland, Black studied at the University of Glasgow, where he received an MA (Mathematics and Physics) in 1929, an MA (Economics and Politics) in 1932, and a PhD (Economics) in 1937. He also served there as Senior Lecturer in Social Economics, 1946–52. The bulk of his teaching career was at the University College of North Wales, Bangor: Lecturer in Economics, 1934–45; Professor of Economics, 1952–68; and Professor Emeritus 1968 onwards.

Black's very early research was in public finance, of which the major work is Black (1939). It is, however, his work in the 1940s and early 1950s (notably Black, 1948a, 1948b, 1948c, 1949, 1950 and Black and Newing, 1951), work which was integrated and expanded in Black (1958), which is the basis for his status as a father of the modern theory of public choice.

Roughly 200 years ago Condorcet (1785) demonstrated that majority rule need not yield a stable outcome when there are more than two alternatives to be considered. Although periodically rediscovered or reinvented by succeeding generations of scholars, the 'paradox of cyclical majorities' was, for all practical purposes, unknown to modern students of democratic theory until called to their attention by Duncan Black (see especially Black, 1948a, 1958). Black demonstrated that the 'paradox' was not just a mathematical curiosity but rather was connected to important political issues such as manipulability of voting schemes (1958, p. 44; see also 1948a, p. 29) and the absence of strong similarity of citizen preference structures (Black, 1958, pp. 10–14).

Although Black was not the first to discover this phenomenon, his work is the foundation of all subsequent research on the problem. The investigations in this field of his principal predecessors, Condorcet and Lewis Carroll, had made no impact on the intellectual community of their day and had been completely forgotten. Their work is known today only because Black, after discovering the phenomenon himself, discovered his predecessors (Campbell and Tullock, 1965, p. 853).

Duncan Black's vision in the 1940s was a grand yet simple one: to develop a pure science of politics as a ramified theory of committees, so as to place political science on the same kind of theoretical footing as economics, with voters substituting for consumers. Because many of the basic ideas in his 1958 classic, *The Theory of Committees and Elections*, appear so 'obvious' in retrospect that it is hard to believe that they have not always been part of the stock of general human knowledge, and because this work understates by its silence the magnitude of Black's originality, the magnitude of Black's own contributions is often underappreciated. Black's great strength is that he has served both as synthesizer and pioneer. He rediscovered and reinterpreted for contemporary social science the strikingly modern probabilistic and game theoretic insights of long dead theorists such as Dodgson (Lewis Carroll), Borda and Condorcet (for example, the paradox of cyclical majorities, the Condorcet criterion, the Borda criterion, optimizing strategies under the limited vote, results on manipulability of voting schemes, the Condorcet jury theorem); while himself developing such seminal ideas as single-

peakedness, the importance of the median voter given ordinal preferences, and the notion of equilibrium in a spatial voting game (Black and Newing, 1951; Black, 1958, 1967, 1969, 1976). Black's forthcoming biography of Lewis Carroll will emphasize Carroll's contributions to logic and the importance of his work on representation (under his real identity, that of the mathematician C.L. Dodgson) as a precursor to the modern theory of games and economic behaviour.

Underpinning virtually all of Black's work was the deceptively simple insight of modelling political phenomena in terms of the preferences of a given set of individuals in relation to a given set of motions, the same motions appearing on the preference schedule of each individual, where motions can be represented as points on a real line or in an N-dimensional space. Black's work on what (after him) has come to be called 'the theory of committees and elections' has been 'one of the pillars on which rests the contemporary theory of public choice' (Grofman, 1981).

Bernard Grofman

See also *arrow's theorem; borda, jean-charles de; condorcet, marquis de; democratic paradoxes, politics and economics; social choice; social choice: recent developments voting paradoxes.*

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