

Table 1. Basic innovations in social science, 1900-65. Abbreviations in column 1: An, anthropology; Ec, economics; Math, mathematics; Phil, philosophy, logic, and history of science; Pol, politics; Psy, psychology; Soc, sociology. In column 6, + N indicates a larger number of collaborators with a less crucial share in the work. Abbreviations in column 7: QFE, quantitative findings explicit; QPE, quantitative problems explicit; QPI, quantitative problems implied; Non-Q, predominantly nonquantitative.

Contribution	Contributor	Time	Place	Type of support	No. of workers	Quantitative aspects	Years until impact
1. Theory and measurement of social inequalities (Ec)	V. Pareto C. Gini	1900 1908	Lausanne, Swit. Cagliari, It. Padua, It. Rome, It.	University chairs	1 + N	QFE	25
2. Sociology of bureaucracy, culture, and values (Soc)	M. Weber	1900-21	Freiburg, Ger. Heidelberg, Ger. Munich, Ger.	University chair with research support	1	QPI	20 ± 10
3. Theory of one-party organization and revolution (Pol)	V. I. Lenin	1900-17	Shushenskoe, Siberia London, Eng. Munich, Ger.	Underground party	1 + N	QPI	10 ± 5
4. Psychoanalysis and depth psychology (Psy)	S. Freud C.G. Jung A. Adler	1900-25 1910-30 1910-30	Vienna, Aus.	University institute of psychology	1 + N	Non-Q	30 ± 10
5. Correlation analysis and social theory (Math)	K. Pearson F. Edgeworth R.A. Fisher	1900-28 1900-30 1920-48	London, Eng. Oxford, Eng. Cambridge, Eng. Harfenden, Eng.	University chairs	1 + N	QFE	25 ± 15
6. Gradual social transformation (Pol)	B. Webb S. Webb G.B. Shaw H.G. Wells	1900-38	London, Eng.	Fabian society	4 + N	QPE	35 ± 5
7. Elite studies (Soc)	G. Mosca V. Pareto H.D. Lasswell	1900-23 1900-16 1936-52	Turin, It. Lausanne, Swit. Chicago, Ill.	University institutes	1 + N	QFE	40 ± 10
8. Unity of logic and mathematics (Phil)	B. Russell A.N. Whitehead	1905-14	Cambridge, Eng.	University institute	2	QPE	30

9. Pragmatic and behavioural psychology (Psy)	J. Dewey G.H. Mead C. Cooley W.I. Thomas	1905-25 1900-34 1900-30 1900-40	Ann Arbor, Mich. Chicago, Ill. Ann Arbor, Mich. Chicago, Ill. New York, N.Y.	University chairs	1	Non-Q	20 ± 10
10. Learning theory (Psy)	E.L. Thorndike C. Hull <i>et al.</i>	1905-40	New York, N.Y. New Haven, Conn.	Teachers college, Institute of human relations	1 + N	QFE	20 ± 5
11. Intelligence tests (Psy)	A. Binet L. Terman C. Spearman	1905-11 1916-37 1904-27	Paris, Fr. Stanford, Calif. London, Eng.	Testing organizations	1 + N	QFE	15 ± 5
12. Role of innovations in socioeconomic change (Ec)	J.A. Schumpeter  W.F. Ogburn A.P. Usher J. Schmookler	1908-14 1946-50 1922-30 1924 1966	Vienna, Aus. Cambridge, Mass. New York, N.Y. Cambridge, Mass. Minneapolis, Minn.	University chair and research program	1 + N	QPI	40
13. Conditioned reflexes (Psy)	I. Pavlov	1910-30	Leningrad, U.S.S.R.	Imperial medico-surgical academy	1 + N	QPI	20 ± 10
14. Gestalt psychology (Psy)	M. Wertheimer K. Kofka W. Koehler	1912-32	Berlin, Ger.	University chairs	3 + N	Non-Q	25 ± 5
15. Sociometry and sociograms (Soc)	J.L. Moreno	1915 1934-43	Innsbruck, Aus.	University chair	1	QFE	10
16. Soviet type of one-party state (Pol)	V.I. Lenin <i>et al.</i>	1917-21	Leningrad, U.S.S.R.	Politburo	1 + N	QPI	5 ± 5
17. Large-scale nonviolent political action (Pol)	M.K. Gandhi	1918-34	Ahmedabad, India	Political movement and institute (ashram)	1 + N	Non-Q	15 ± 10
18. Central economic planning (Ec)	Q. Krassin G. Grinko	1920-26	Moscow, U.S.S.R.	Government institute	1 + N	QFE	7 ± 6
19. Social welfare function in politics and economics (Ec)	A.C. Pigou K. Arrow	1920-56 1951	London, Eng. Stanford, Calif.	University chairs	1 + N	QPE	40 ± 10
20. Logical empiricism and unity of science (Phil)	M. Schlick R. Carnap O. Neurath P. Frank L. Wittgenstein H. Reichenbach C. Morris	1921-38     1921 1936-50	Vienna, Aus.     Cambridge, Eng. Berlin, Ger. Chicago, Ill. Cambridge, Mass.	Vienna circle and university chairs	3 + N	QPI	20 ± 5

21. Quantitative mathematical studies of war (Pol)	L.F. Richardson Q. Wright	1921-55 1936-66	London, Eng. Chicago, Ill.	University chair and research program	1 + N	QFE	25 ± 10
22. Projective tests (Psy)	H. Rorschach H. Murray	1923	Herisau, Swit. Cambridge, Mass.	Cantonal mental institute University chair	1	Non-Q	15 ± 5
23. Sociology of knowledge and science (Soc)	K. Mannheim	1923-33	Heidelberg, Ger. Frankfurt, Ger.	University chairs, institutes, and programs	1 + N	Non-Q	10
24. Quantitative political science and basic theory (Pol)	C. Merriam S. Rice H. Gosnell H.D. Lasswell	1925-36	Chicago, Ill.	University chairs	3 + N	QFE	15 ± 5
25. Functionalist anthropology and sociology (An)	A.R. Radcliffe-Brown  B. Malinowski T. Parsons	1925  1925-45 1932-50	Cape Town, S. Afr. Sidney, Aus. Chicago, Ill. Oxford, Eng. London, Eng. Cambridge, Mass.	University chairs and travel grants	1 + N	Non-Q	20 ± 10
26. Ecosystem theory (Soc)	R. Park E.W. Burgess	1926-38	Chicago, Ill.	University chairs	2 + N	QFE	25 ± 5
27. Factor analysis (Math)	L. Thurstone	1926-48	Chicago, Ill.	University chair	1 + N	QFE	15 ± 10
28. Operational definitions (Phil)	P.W. Bridgman	1927-38	Cambridge, Mass.	University chair	1	QPI	15 ± 5
29. Structural linguistics (Math)	R. Jakobson and Prague circle N. Chomsky	1927-67 1957-	Brno, Czech. Cambridge, Mass. Cambridge, Mass.	University chairs and programs	1 + N	QPE	20 ± 10
30. Economic propensities, employment, and fiscal policy (Ec)	J.M. Keynes	1928-44	Cambridge, Eng.	University chair	1 + N	QFE	6 ± 4
31. Game theory (Math)	J.v. Neumann O. Morgenstern	1928-44 1944-58	Berlin, Ger. Princeton, N.J.	University chairs and institute	2 + N	QFE	10 ± 5
32. Peasant and guerrilla organization and government (Pol)	Mao Tse-tung	1929-49	Kiangsi, P.R. China Yenan, P.R. China Peking, P.R. China	Political movement	1 + N	QPI	15 ± 10
33. Community studies (Soc)	R. Lynd H. Lynd L. Warner C. Kluckhohn	1929-62 1941	New York, N.Y.  Chicago, Ill.	University chairs	2	QFE	20 ± 5

34. Culture and personality and comparative child rearing (An)	R. Benedict M. Mead G. Gorer A. Kardiner J. Piaget E. Erickson J. Whiting I. Child	1930 1930  1939 1940-60 1950 1953	New York, N.Y.   Geneva, Swit. Cambridge, Mass. Cambridge, Mass. New Haven, Conn.				
35. Economics of monopolistic competition (Ec)	E.H. Chamberlin J. Robinson	1930-33	Cambridge, Mass. Cambridge, Eng.	University	1	QPE	10 ± 5
36. Authoritarian personality and family structure (Psy)	M. Horkheimer H. Marcuse E. Fromm T. Adorno <i>et al.</i> A. Mitscherlich	1930-32   1950 1962	Frankfurt, Ger.   Stanford, Calif. Frankfurt, Ger. Heidelberg, Ger.				
37. Large-scale sampling in social research (Math)	M. Hansen	1930-53	Washington, D.C.	Government office	N	QFE	5
38. Laboratory study of small groups (Psy)	K. Lewin R. Lippitt R. Likert D. Cartwright	1932-36	Cambridge, Mass.	University and research institutes	1 + N	QPI	10 ± 5
39. National income accounting (Ec)	S. Kuznets C. Clark U.N. Statistical Office	1933-40  1953	Philadelphia, Pa. Cambridge, Eng. Washington, D.C. New York, N.Y.	Public research institutes and university chairs	1 + N	QFE	10 ± 5
40. General systems analysis (Phil)	L.v. Bertalanffy N. Rashevsky J.G. Miller A. Rapoport R.W. Gerard K. Boulding	1936  1956	Vienna, Aus. Chicago, Ill. Ann Arbor, Mich.	University research institutes	4 + N	QPI	15 ± 5
41. Attitude survey and opinion polling (Psy)	G. Gallup H. Cantril P.F. Lazarsfeld A. Campbell	1936 1937-52 1940 1942	Princeton, N.J.  New York, N.Y. Ann Arbor, Mich.	University and research institutes, commercial organizations	3 + N	QFE	5
42. Input-out analysis (Ec)	W. Leontief	1936-53	Cambridge, Mass.	University chair	1 + N	QFE	15
43. Linear programming (Ec)	L. Kantorovich J.B. Souto G.B. Dantzig R. Dorfman	1938-50 1941 1948 1958	Leningrad, U.S.S.R. Buenos Aires, Arg. Washington, D.C. Berkely, Calif.	University and research institutes and government office	1 + N	QFE	10 ± 5

44. Content analysis (Pol)	H. Lasswell I. deS. Pool B. Berelson P. Stone	1938-56 1961-66	Chicago, Ill. Cambridge, Mass.	University institute	2	QFE	10
45. Operant conditioning and learning; teaching machines (Psy)	B.F. Skinner	1938-58	Bloomington, Ind. Cambridge, Mass.	University chairs	1 + N	QPE	15
46. Statistical decision theory (Math)	A. Wald	1939-50	New York, N.Y.	University chair	1 + N	QPE	15 ± 5
47. Operational research and systems analysis (Math)	P.M.S. Blackett P. Morse R. Bellman	1941-50 1941-58	London, Eng. Cambridge, Mass.	Government research institutes	N	QPE	5
48. Scaling theory (Psy)	L. Guttman C. Coombs	1941-54	Ithaca, N.Y. Ann Arbor, Mich.	University chairs	3 + N	QFE	10 ± 5
49. Quantitative models of nationalism and integration (Pol)	K. Deutsch B. Russett R.L. Merritt	1942-67	Cambridge, Mass. New Haven, Conn.	University chairs	1 + N	QFE	20 ± 5
50. Theories of economic development (Ec)	P. Rosenstein-Rodan R. Prebisch R. Nurkse W.A. Lewis G. Myrdal A.O. Hirschman R.F. Harrod E. Domar H. Chenery	1943-58	London, Eng. Santiago, Chile New York, N.Y. Manchester, Eng. Stockholm, Swed. New Haven, Conn. Oxford, Eng. Baltimore, Md. Stanford, Calif.	Government offices, U.N. regional commission, university chairs	6 + N	QFE	10 ± 5
51. Computers (Math)	V. Bush S. Caldwell D.P. Eckert J.W. Mauchly	1943-58	Cambridge, Mass. Philadelphia, Pa.	University and government research laboratories	N	QFE	10 ± 5
52. Multivariate analysis linked to social theory (Soc)	S. Stouffer T.W. Anderson P. Lazarsfeld	1944-54	Washington, D.C. Cambridge, Mass. New York, N.Y.	Government and university research institutes	3 + N	QFE	5
53. Information theory, cybernetics, and feedback systems (Math)	C. Shannon N. Wiener	1944-58	Cambridge, Mass. Orange, N.J.	University research institute and Bell Laboratories	2 + N	QFE	10 ± 5
54. Econometrics (Ec)	J. Tinbergen P. Samuelson E. Malinvaud	1935-40 1947 1964	The Hague, Neth. Cambridge, Mass. Paris, Fr.	Government institute and university chairs	1 + N	QFE	10 ± 5

55. Cognitive dynamics of science (Phil)	J.B. Conant I.B. Cohen T. Kuhn D. deS. Price	1946-64	Cambridge, Mass.  Berkeley, Calif. New Haven, Conn.	University chairs	3 + N	Non-Q	15
56. Computer simulation of economic systems (Ec)	L. Klein G. Orcutt	1947-60	Philadelphia, Pa. Madison, Wis.	Research institutes	2 + N	QFE	5
57. Structuralism in anthropology and social science (An)	C. Levi-Strauss	1949-60	Paris, Fr.	Museum (government)	1 + N	QPI	15 ± 5
58. Hierarchical computerized decision models (Math)	H. Simon	1950-65	Pittsburgh, Pa.	University research institute	1 + N	QPE	10
59. Cost-benefit analysis (planned programming and budgeting) (Pol)	C. Hitch	1956-63	Santa Monica, Calif.	Government-related research institute	3 + N	QFE	7
60. Computer simulation of social and political systems (Pol)	W. McPhee H. Simon A. Newell I. Pool R. Abelson	1956-66  1958-64	Pittsburgh, Pa.  Cambridge, Mass. New Haven, Conn.	University chairs and research institutes	2 + N	QPE	5 ± 3
61. Conflict theory and variable sum games (Psy)	A. Rapoport	1960-	Ann Arbor, Mich.	University research institute	1 + N	QFE	2
62. Stochastic models of social processes (Math)	J.S. Coleman	1965	Baltimore, Md.	University research institute	1 + N	QFE	5