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In Tribute to Derek John de Solla Price: A Citation Analysis of *Little Science, Big Science*

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Foreword

Last year, we published a tribute to the late science historian, Derek John de Solla Price.¹ As mentioned in that essay, the limitations of space made it difficult to do justice to his varied accomplishments. In that tribute, I chose to emphasize Derek's work on the importance of technology and methodology in the advancement of science. As noted, however, I was preparing a citation analysis of Price's 1963 book *Little Science, Big Science*, his best-known work. That analysis is reprinted here from a special *fest-schrift* issue of *Scientometrics* honoring his life and work. Although originally intended for publication in *Current Contents*®, the article was adapted for the memorial issue of *Scientometrics*.² The article appeared recently along with 25 other papers by Derek's friends, colleagues, and admirers.³

Since Derek J. de Solla Price was such a significant player in the advancement of citation indexing, it is

fitting that one of his works should be subjected to citation analysis. The analysis demonstrates the wide-ranging, continuing impact that *Little Science, Big Science* has had since its publication. The first portion provides a tabulation of citation frequencies for two decades. The second part is a brief content analysis of a random selection of citing articles that were influenced by the book. This analysis demonstrates the diverse variety of publications that have cited *Little Science, Big Science*.

A significant indicator of the book's continuing importance is that Columbia University Press will release an updated edition of *Little Science, Big Science* later this year. I was honored to collaborate with my good friend Robert K. Merton in the preparation of a foreword to this new edition.

What follows next is the full text of the *fest-schrift* article, which is reprinted here with the permission of the publisher.

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In Tribute to Derek John de Solla Price: A Citation Analysis of *Little Science, Big Science*

Eugene Garfield

Citation Frequency Data

Derek John de Solla Price died on September 3, 1983. The loss of this exciting and dynamic man is one that is felt not just by his friends, but by the scientific community as a whole. This article was originally planned as part of an essay for *Current Contents*[®] (CC[®]).¹ But I was delighted by the opportunity to contribute it to this special tribute issue of *Scientometrics*.

Appropriately, we have identified Derek's most-cited works. In addition, we've taken a close look at the various ways in which *Little Science, Big Science*,² his best-known work, was cited. Of course, Derek's pioneering role in bringing together the history of science, scientometrics, and information science is widely recognized. Howard D. White and Belver C. Griffith demonstrated the general impact of his work on scientific communication and information science in a study of influential authors in those fields.³ They used the online *Social SCISEARCH*[®] system to create a co-cited author map from the *Social Sciences Citation Index*[®] (SSCI[®]) for 1972-1979. This "influence map," reproduced in Figure 1, identified the five main author groups, or "schools," within the field of information science. Price is situated squarely in the center of the scientific communications school.

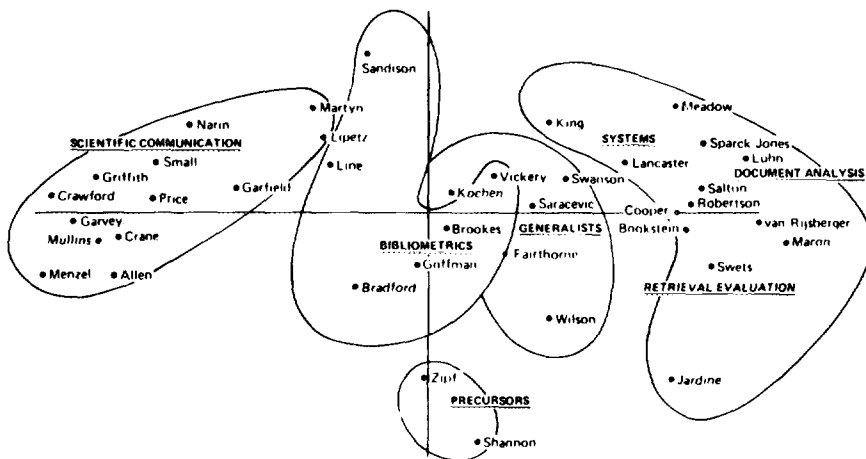
Price wrote extensively throughout his career on numerous subjects. He wrote or edited 14 books and published about 240 scientific papers. An examination of the SSCI, the *Science Citation Index*[®] (SCI[®]), and the *Arts & Humanities Citation Index*[™] (A&HCI[™]) reveals that he was cited in at least 2,200 publications.

He was best known for his work in scientometrics and the history of science, in which he received a second doctorate in 1954 from Cambridge. His scientific contributions were not limited to those fields, however. His early papers were in mathematics and theoretical and experimental physics. Indeed, he earned his first doctorate in experimental physics in 1947 from the University of London.

He also had a lifelong interest in scientific instruments and hardware. He published papers and books on medieval Chinese clocks;^{4,5} on a Middle English instrument for calculating planetary motions;^{6,7} and on the ancient Greek Antikythera mechanism, a sophisticated mechanical calendar.⁸⁻¹⁰ Derek was extremely proud of these publications, and justifiably so. He relished the opportunity to talk about them to various audiences, both expert and lay.

Table 1 lists Price's most-cited publications. Chief among the works in this list, of course, is *Little Science, Big Science*, the book composed of four lectures on quantita-

Figure 1: A map of information science authors by Howard D. White and Belver C. Griffith.



Source: White H D & Griffith B C. Author cocitation: a literature measure of intellectual structure. *J. Amer. Soc. Inform. Sci.* 32:163-71, 1981. ©1981 by John Wiley & Sons, Inc.

tive methods for the empirical analysis of science, both historical and modern. Those lectures were presented at Brookhaven National Laboratory in New York in 1962.

"Networks of scientific papers," published in 1965,¹¹ was perhaps Price's most influential paper in the field of information science. An attempt to characterize the world network of scientific literature, it demonstrated that the pattern of citations among the world's papers defines the parameters of scientific research fronts.

The work that first made Derek one of the world's most visible scientists was *Science Since Babylon*.¹² In 1960, he was appointed to a chair in the newly created History of Science department at Yale University. He presented five lectures on the turning points in scientific history that defined the character of modern science. This inaugural lecture series was published under the title *Science Since Babylon*.¹²

"Collaboration in an invisible college,"¹³ coauthored with Donald deB. Beaver, outlines and analyzes the organization of, and communication within, a community of biochemists. "Citation measures of hard science,

Table 1: The seven most-cited works by Derek J. de Solla Price. A=number of citations the item received in the *SCJ*[®], 1955-1983. B=number of citations the item received in the *SSCJ*[®], 1966-1983. C=number of citations the item received in the *A&HCI*TM, 1976-1983. D=total number of citations the item received.

	A	B	C	D
<i>Little Science, Big Science</i> , 1963.	329	348	13	690
Networks of scientific papers. <i>Science</i> , 1965.	101	112	1	214
<i>Science since Babylon</i> , 1961.	107	83	11	201
Collaboration in an invisible college. <i>Amer. Psychol.</i> , 1966.	40	57	2	99
Citation measures of hard science, soft science, technology, and nonscience. <i>Communication among Scientists and Engineers</i> , 1970.	40	57	1	98
A general theory of bibliometric and other cumulative advantage processes. <i>J. Amer. Soc. Inform. Sci.</i> , 1976.	19	43	1	63
Measuring the size of science. <i>Proc. Isr. Acad. Sci. Human.</i> , 1969.	31	29	0	60

soft science, technology, and nonscience"¹⁴ attempts to elucidate those characteristics that distinguish scientific from nonscientific scholarship. Price distinguished science from nonscience by comparing the number of citations an article gave to recent papers (those published within the last 5 years) to the number it gave to papers more than 20 years old. The higher the proportion of citations to older papers, the more likely it is that the article is nonscientific. This hypothesis is neither widely accepted nor adequately tested.

In "A general theory of bibliometric and other cumulative advantage processes,"¹⁵ Price provides a framework that unifies such statistical descriptions as Lotka's Law, Bradford's Law, Pareto's Law, and Zipf's Law. "Measuring the size of science"¹⁶ is a statistical study of the number and distribution of publishing scientists in the world. It also compares each country's share of the world's scientific wealth with its share of material wealth. It is only one of many examples of the use of publication data (bibliometrics) to provide indicators of scientific activity.

Table 2 shows the number of citations to *Little Science, Big Science*, broken down into five-year intervals and ranked according to subject. The book describes the exponential growth of scientific manpower and the scholarly literature. It also covers various aspects of the productivity of scientists. The book goes on to offer political strategies for the modern scientist, in light of the inevitable slowdown in the growth rate of the scientific enterprise.

In view of these diverse contributions, it is not surprising to find that the book has been cited at least 215 times by articles published in information and library science journals. At least 75 articles published in sociology journals have also cited the book, as have another 55 articles in multidisciplinary journals, such as *Science* and *Nature*. Price's further intellectual influence is partially indicated by the 50 explicit citations from papers published in journals in the history and philosophy of science. And if one separates journals concerned with the social sciences in general from the specialized social sciences journals, one finds another group of 40 articles explicitly influenced by the book. Then there are another 15 or so articles in each of several disciplines, including history, general and internal medicine, political science, operations research and management science, economics, philosophy, physics, and biology—all told, approximately another 100 citations.

Citations to the book do not begin to peak in many fields until 6 to 15 years following its

Table 2: The number of journal articles that cited *Little Science, Big Science* from 1963 to 1983, ranked in descending order within subject category. The total for each column appears at the bottom. The numbers add up to more than the total number of citations to *Little Science, Big Science* due to overlap between subject categories. All data were taken from the *SCF*[®], *SSCF*[®], and *A&HCI*[™].

Journal Subject Category	Number of Citing Articles per Time Period				
	1963- 1968	1969- 1973	1974- 1978	1979- 1983	1963- 1983
Information/Library Science	25	60	74	56	215
Sociology	9	19	31	18	77
Sciences, Multidisciplinary	22	14	11	9	56
History & Philosophy of Science	0	0	10	40	50
Social Sciences & Social Issues	6	16	11	5	38
Psychology	4	12	3	8	27
Education & Educational Research	5	8	5	4	22
History	0	1	6	10	17
Medicine, General & Internal	3	3	3	6	15
Political Science	3	3	6	3	15
Operations Research & Management Science	2	8	4	0	14
Economics	1	3	6	2	12
Philosophy	1	1	2	8	12
Physics	2	5	2	2	11
Biology	6	2	1	1	10
Computer Applications & Cybernetics	1	5	3	0	9
Chemistry	2	1	1	4	8
Planning & Development	0	1	5	2	8
Engineering	2	2	2	1	7
Behavioral Sciences	2	0	4	0	6
Chemistry, Analytical	0	0	2	4	6
Other	19	17	26	27	89
Totals for each column	115	181	218	210	724

publication—showing that the influence of *Little Science, Big Science* has grown and spread for over a dozen years, an unusually long period of time. In information science, the book has received 25 citations for the period 1963-1968, 60 citations in 1969-1973, and 74 citations in 1974-1978. Finally, citation frequency has slowly begun to decline since 1979, with only 56 citations being recorded through 1983. I have no doubt that the planned publication of a new edition of the book will reverse this trend, since it is supposed to include much new, original material. Citations from sociology journals amounted to a total of 9 in 1963-1968, 19 in 1969-1973, and 31 in 1974-1978, before falling off to 18 in 1979-1983.

Citations from multidisciplinary science journals range from a high of 22 in the interval immediately after the publication of *Little Science, Big Science* to a low of 9 in 1979-1983. In the history and philosophy of science journals, no citations to the book were recorded in the first 10 years following its publication. However, these figures may be artifacts, at least in part, of ISI's coverage. Journals in the history of science

were not listed under their own separate subject category in the *SCI* until 1975. And although the history of science appeared in the first volume of the *SSCI* in 1966, our coverage of the social sciences then was by no means as extensive as it is today. By the late 1970s, however, our coverage could confidently be called comprehensive. Even so, the book received a total of only 10 citations from 1974 to 1978. Thus, the increase to a total of 40 citations from 1979 to 1983 may be seen as real, probably indicating an increasing interest in quantitative methodology in the history of science.

Little Science, Big Science has been cited in journals in over 80 specialties or disciplines since its publication in 1963. For the sake of brevity, Table 2 lists only the top 22 fields. But the category labeled "other" includes more than 60 disciplines. Among them are the following: aeronautics and aerospace science; anthropology; botany; criminology and penology; forestry; geophysics; geriatrics and gerontology; materials science; metallurgy and mining; meteorology; nuclear science and technology; paleontology; pediatrics; soil science; spectroscopy; telecommunica-

tions; veterinary medicine; and zoology. In this composite set of journals, no single five-year interval stands out. As the bar graph in Figure 2 shows, citations to Price's book peaked in the interval from 1974 to 1978, but they remained at a high level from 1979 to 1983. Figure 3 is a year-by-year plot of the same data.

Table 3 lists the journals that cited the book from 1963 through 1983, arranged in descending order according to the number of citations each gave to it. Articles in the *Journal of the American Society for Information Science (JASIS)* cited Price's book 36 times during the 20-year period. *Science Studies*, which in 1976 changed its name to the *Social Studies of Science*, came next, with 32 citations. *Scientometrics* followed closely with 31 citations. It is important to point out that this journal was founded in 1978. Its high rank in this table indicates the extent of the impact of Price's book. Next came *Science*, with 19; *American Sociological Review*, with 17; and the *Journal of Documentation* and *Library Trends*, with 14 each. There are over 260 journals represented in Table 3, giving additional evidence of the book's widespread influence.

Content Analysis

A content analysis of each of the almost 700 articles that have cited *Little Science, Big*

Science would be a vast undertaking indeed. Yet, given the wide-ranging nature of the citations to this book, I was prompted to ask several questions about the characteristics of the book's influence. Primary among them was: how do scientists in fields other than information and library science and the history and philosophy of science make use of the book? To explore this question, I selected a small, random sample of journals from Table 3.

In the articles selected from *SCT's* coverage, *Little Science, Big Science* is often cited for the empirical evidence and methods through which Price drew his conclusions. Articles from such disparate fields as biology,¹⁷ veterinary medicine,¹⁸ geology,¹⁹ telecommunications,²⁰ and zoology²¹ cite his observations on the time required for the total number of scientific journals, abstracts, and manpower to double—that is, the exponential growth of science. An article in the ecology journal *Oikos*²² uses statistical distribution curves similar to those Price used to analyze the traits evolved by various organisms to improve their chances of survival. And in tribute to the comprehensive, wide-ranging nature of Price's scholarship, a number of articles²³⁻²⁵ cite his observations concerning the impact of the two world wars on science²³ and his widely quoted statement that most of the scientists who ever lived are still alive today.²⁵

Figure 2: Bar graph of citations to *Little Science, Big Science* from journals in Table 2, in intervals of five years.

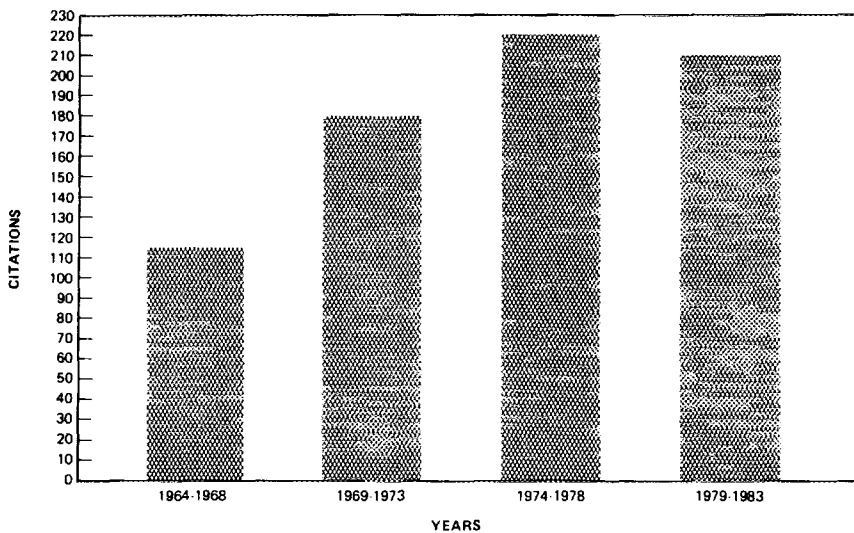
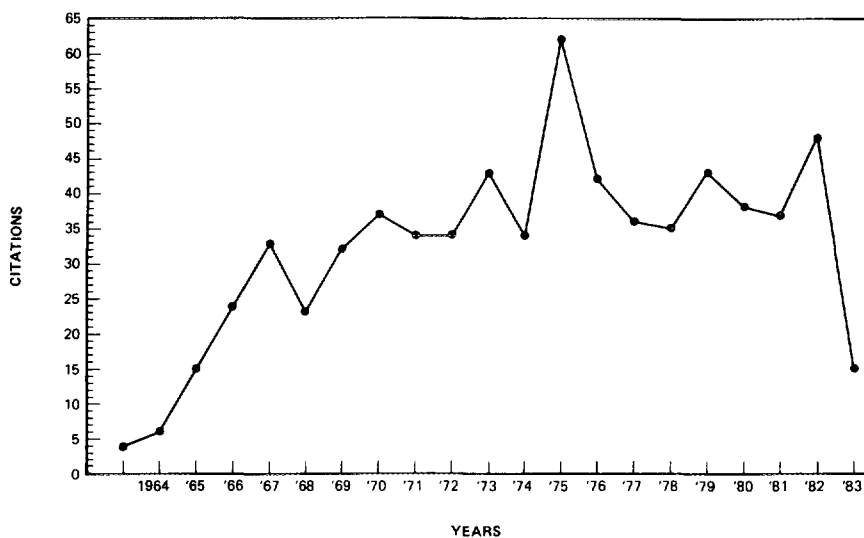


Figure 3: Graph showing year-by-year distribution of citations to *Little Science, Big Science* from journals in Table 2.



Articles selected from the *SSCI* cite *Little Science, Big Science* for many of the same reasons as just mentioned, and for other reasons as well. Price's empirical methods of analyzing the scientific literature guided the author of an article in the *Australian and New Zealand Journal of Criminology* in discussing a decade's worth of articles published in the journal.²⁶ An article in *International Studies Quarterly* commented on the use of exponential growth curves in making projections of future events in international politics, using Price's data as an example.²⁷ An article in the *Gerontologist* examined the relationship between scientists' ages and their productivity, putting its findings in perspective by reporting Price's observation that relatively few members of any discipline produce more than four or five articles during their entire careers.²⁸

In many instances, the data in Price's book are used as a framework within which to locate a discussion. One example includes an analysis of the literature on marriage and the family in the *Journal of Marriage and the Family*. The author compares his explanation of the trend toward joint authorship in his own field with Price's conclusions concerning collaborative efforts: "...[It] may be the case that collaborative research in the area of marriage and the family more frequently reflects master-apprentice relationships, whereas in

'big science' [according to Price], it is the need to share highly expensive technology and the requirements for several domains of expertise which cement collegial and collaborative ties."²⁹

An article in the *International Journal of Nursing Studies* projects the possible frontiers of nursing in the twenty-first century. In discussing future directions in nursing education, it cites Price's statistics on the rate of change in medical knowledge.³⁰ And an article in the *Food, Drug, Cosmetic Law Journal* refers to the book to justify the creation of formal institutions to appraise the potential impact of science on society.³¹ Finally, a discussion of the development of curricula in *Engineering Education* extrapolates educational trends from Price's observations on the increase in the world total of scientific papers.³²

Other papers provide further evidence of Price's impact on the social sciences. An article in *Schizophrenia Bulletin*³³ uses his concept of the invisible college in a citation analysis of the impact of a landmark article in US psychiatry.³⁴ In 1975, Alfred Yankauer, then the editor of the *American Journal of Public Health*, reevaluated that journal's purpose in light of Price's conclusions concerning invisible colleges and a journal's readership: "Derek Price...pointed out that the lines of communication, the scope of reading, and

Table 3: Journals in the *SCP*[®], *SSCP*[®], and *A & HCI*TM that cited *Little Science, Big Science* from 1963 to 1983. Journals are ranked in descending order by the number of times they cited the book. A = number of times cited. B = journal title.

A	B	A	B	A	B
36	J. Amer. Soc. Inform. Sci.	2	IEEE Trans. Educ.	1	Bull. Sci. Technol. Soc.
34	Sci. Stud./Soc. Stud. Sci.	2	Inform. Process. Manage.	1	Can. Aeronaut. Space J.
31	Scientometrics	2	Int. J. Comp. Sociol.	1	Can. J. Neurol. Sci.
19	Science	2	Isis	1	Can. J. Sociol.
17	Amer. Sociol. Rev.	2	J. Chem. Educ.	1	Can. Libr. J.
14	J. Doc.	2	J. Chem. Inform. Comput. Sci.	1	Can. Med. Assn. J.
14	Libr. Trends	2	J. High. Educ.	1	Cent. State. Speech J.
13	Amer. Psychol.	2	J. Inform. Sci.	1	Child Develop.
12	Nauchn.-Tekhn. Inform.	2	J. Libr.	1	Chim. Ind. Milan
11	Coll. Res. Libr.	2	J. Metals	1	Couns. Psychol.
10	Minerva	2	J. Personal. Soc. Psychol.	1	CRC Crit. Rev. Anal. Chem.
8	Libr. Inform. Sci.	2	J. Polit.	1	Curr. Anthropol.
7	Fed. Proc.	2	J. Sci. Ind. Res. India	1	Datamation
7	Nachr. Dok.	2	J. Roy. Statist. Soc. Ser. A Gener.	1	Econ. Hist. Rev.
7	Res. Policy	2	Knowledge	1	Econ. Rec.
7	Sociol. Inq.	2	Kolner Z. Soziol. Sozialpsychol.	1	Educ. Rec.
6	Amer. Sociol.	2	Lancet	1	Educ. Res.
6	Bull. Med. Libr. Assn.	2	Libr. Quart.	1	Ekon. Cas.
6	IEEE Trans. Eng. Manage.	2	Libr. Res.	1	Encounter
6	Inform. Storage Retr.	2	Libr. Resour. Tech. Serv.	1	Energ. Nucl.
6	Nature	2	N. Engl. J. Med.	1	Eng. Educ.
6	Sociol. Educ.	2	Perspect. Biol. Med.	1	Euphytica
5	Amer. J. Sociol.	2	Policy Sci.	1	Food Drug Cosmet. Law J.
5	Aslib Proc.	2	Polit. Ekon.	1	Fresenius Z. Anal. Chem.
5	Deut. Z. Phil.	2	Postgrad. Med.	1	Front. Libr.
5	Hist. Polit. Econ.	2	Psychol. Rec.	1	Futures
5	IEEE Trans. Prof. Commun.	2	Psychophysiology	1	Geogr. Rev.
5	Int. Soc. Sci. J.	2	Sci. Progr. London	1	Geophys. J.—Engl. Tr.
5	J. Chem. Doc.	2	Scientia	1	Georgetown Law J.
5	Proc. Amer. Soc. Inform. Sci.	2	Soc. Stud.	1	Gerontologist
4	Amer. Behav. Sci.	2	Sociol. Rev.	1	Gesch. Ges.
4	Amer. Sci.	2	Technol. Forecast. Soc. Change	1	Harvard Libr. Bull.
4	Annu. Rev. Inform. Sci. Technol.	2	Vestn. Akad. Nauk SSSR	1	Hastings Center Report
4	Chem. Brit.	2	Vop. Filos. SSSR	1	Health Phys.
4	Int. Forum Inform. Doc.	2	World Polit.	1	Higher Educ.
4	Sociol. Quart.	1	Acta Cient. Venez.	1	Homo
4	Sociol. Soc. Res.	1	Acta Psychol.	1	IEEE Spectrum
4	Sociology	1	Actes Rech. Sci. Soc.	1	Ind. Lab.—Engl. Tr.
4	Spec. Libr.	1	Admin. Sci. Quart.	1	Inquiry
4	UNESCO Bull. Libr.	1	Aeronaut. J.	1	Int. J. Immunopharmacol.
3	Amer. Doc.	1	Amer. Anthropol.	1	Int. J. Nurs. Stud.
3	Ann. NY Acad. Sci.	1	Amer. Econ. Rev.	1	Int. Libr. Rev.
3	Czech. J. Phys.	1	Amer. Educ. Res. J.	1	Int. Stud. Quart.
3	Hum. Relat.	1	Amer. Hist. Rev.	1	Jahrb. Nat. Statist.
3	Interciencia	1	Amer. J. Dis. Child.	1	Jahrb. Sozialwiss.
3	Interfaces	1	Amer. J. Orthopsychiat.	1	J. Acad. Libr.
3	J. Econ. Lit.	1	Amer. J. Phys.	1	J. Aesthet. Educ.
3	J. Hist. Behav. Sci.	1	Amer. J. Public Health	1	J. Amer. Vet. Med. Assn.
3	Libr. J.	1	Anal. Chem.	1	J. Assn. Comput. Mach.
3	Libri	1	Anesth. Analg.	1	J. Brit. Nucl. Energ. Soc.
3	Manage. Sci.	1	Ann. Amer. Acad. Polit. Soc. Sci.	1	J. Comp. Econ.
3	Pac. Sociol. Rev.	1	Arch. Eur. Sociol.	1	J. Educ. Res.
3	Phil. Soc. Sci.	1	Aust. N. Z. J. Criminol.	1	J. Electron Spectrosc. Relat. Ph.
3	Phys. Today	1	Aust. N. Z. J. Sociol.	1	J. Environ. Syst.
3	Search	1	Behav. Sci.	1	J. Forest.
3	Trans. Amer. Geophys. Union	1	Behav. Sci. Res.	1	J. Hum. Psychol.
2	Amer. Polit. Sci. Rev.	1	Brit. J. Polit. Sci.	1	J. Libr. Hist. Phil. Comp. Libr.
2	Ann. Intern. Med.	1	Brit. J. Sociol.	1	J. Marriage Fam.
2	Annu. Rev. Sociol.	1	Bull. Amer. Phys. Soc.	1	J. Math. Sociol.
2	Arch. Environ. Health	1	Bull. Brit. Psychol. Soc.	1	J. Med. Educ.
2	Aust. Psychol.	1	Bull. Psychonomic Soc.	1	J. Neuropathol. Exp. Neurol.
2	BioScience	1		1	J. Oper. Res. Soc.
2	Brit. Med. J.	1		1	J. Polit. Econ.
2	Chem. Ind.—London	1		1	J. Radioanal. Chem.
2	Educ. Admin. Quart.	1		1	J. Read.
				1	J. Read. Behav.

A	B	A	B	A	B
1 J. Rehabil.		1 Polit. Stud.—London		1 Scot. J. Sociol.	
1 J. Sci. Soc. Thailand		1 Proc. Nat. Acad. Sci. USA		1 Simulat. Games	
1 J. Sediment. Petrol.		1 Proc. Roy. Soc. London		1 Soc. Forces	
1 Journalism Quart.		1 Ser. A		1 Soc. Networks	
1 Kem. Kozlemenyek		1 Psychol. Rep.		1 Soc. Sci. Res.	
1 Kjemi		1 Psychology		1 Socio-Econ. Plan. Sci.	
1 Med. Educ.		1 Qual. Quant.		1 Sociol. Cas.	
1 Methods Inform. Med.		1 Quart. Rev. Biol.		1 Sociol. Symposium	
1 Mitt. Osterr. Geogr. Ges.		1 Radio Sci.		1 Sociol. Work Occup.	
1 MO Agr. Exp. Sta. Res. Bull.		1 Radiochem. Radioanal. Lett.		1 Sov. Stud. Phil.—Engl. Tr.	
1 Multivariate Behav. Res.		1 Rep. Progr. Phys.		1 Stud. Psychol.	
1 NZ J. Sci.		1 Res. High. Educ.		1 Syst. Zool.	
1 Nav. Res. Log. Quart.		1 Res. Manage.		1 Talanta	
1 Northwest. Univ. Law Rev.		1 Rev. Econ. Statist.		1 Technol. Culture	
1 Nucl. Eng. Des.		1 Rev. Educ. Res.		1 Theor. Soc.	
1 Oikos		1 Rev. Metaphysics		1 Trans. Inst. Chem. Eng.	
1 Oper. Res. Quart.		1 Rev. Polit.		1 Trans. NY Acad. Sci.	
1 Organ. Behav. Hum.		1 Rev. Roum. Phys.		1 Univ. Quart.—Cult. Educ.	
1 Perform.		1 RQ—Ref. Serv. Div.		1 Soc.	
1 Paleobiology		1 Schizophrenia Bull.		1 Vet. Rec.	
1 Paper Technol. Ind.		1 Scholarly Publ.		1 Z. Bibl. Bibliogr.	
1 Pers. Psychol.		1 School Soc.		1 Z. Soz.	
1 Pers. Soc. Psychol. Bull.		1 Schweiz. Med. Wochenschr.		1 Zh. Vses. Khim. Ob.	
1 Policy Anal.		1 Sci. Technol. Hum. Val.		1 Mendeleeeva	

the personal allegiance of scientists tended to be limited to the...circle of intimates with which they identified themselves, rather than to a large world or even the institution which employed them.... [This] observation...has real relevance to the problems of this journal and its editor. [It points up the fact that] the range of its readers spans many disciplines.... [Although] no one publication can hope to meet all the needs of such diversity...the editor and reader [can agree] on a common purpose for the journal—excellence and quality."³⁵ An article in *American Anthropologist* applies the quantitative methods to an analysis of the field of anthropology.³⁶

Little Science, Big Science had its impact on numerous authors in the arts and humanities as well. *Soviet Studies in Philosophy* printed an address by the ranking Soviet physicist and 1978 Nobel Prize winner Pieter Leonidovich Kapitsa at a UNESCO symposium in Ulm, Federal Republic of Germany, in 1978, in which he discussed the influence of scientific ideas on society.³⁷ That discussion cites Price's observations on the growth of the scientific literature as a historical retrospective. An article in *Technology and Culture* on the development of Renaissance science notes Price's discussion of patterns of informal communication before the rise of the scientific journal.³⁸ Finally, a paper in the *Journal of Library History, Philosophy and*

Comparative Librarianship on the historical place of scientific societies in the exchange of scientific information takes note of Price's work on invisible colleges.³⁹

There will never be another Derek Price. His mind and talent were unique. While others will carry on his work, no one will be able to continue his projects as he would have—to pick up where he left off. And although he was often overly zealous in his identification of and solutions to various problems, he always succeeded in drawing attention to ideas that might otherwise have been overlooked. His provocative style and iconoclasm raised many a scholarly eyebrow, but he was not afraid to acknowledge when he was wrong or had overstated his case.

Notwithstanding his importance and influence, however, Derek was more like a brother to me than a colleague. After all is said and done about his career, there will remain one simple, stark fact: as long as we live and work in this growing field, we will not only miss Derek, but be reminded of his impact on a daily basis. In that sense, he has become immortal.

* * * * *

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