

# Guide to the Henry Margenau Papers

MS 129



compiled by Emily Epstein

June 1996

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## Table of Contents

Collection Overview .....	3
Requesting Instructions .....	3
Administrative Information .....	3
Immediate Source of Acquisition .....	3
Conditions Governing Access .....	4
Conditions Governing Use .....	4
Preferred Citation .....	4
Biographical / Historical .....	4
Scope and Contents .....	5
Arrangement .....	6
Collection Contents .....	7
Series I: Personal and Correspondence, 1931-1989 .....	7
Series II: Writings, 1927-1990 .....	8
Selected Search Terms .....	22

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## Collection Overview

**REPOSITORY:** Manuscripts and Archives  
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**CALL NUMBER:** MS 129

**CREATOR:** Margenau, Henry, 1901-1997

**TITLE:** Henry Margenau papers

**DATES:** 1927-1990

**PHYSICAL DESCRIPTION:** 3.5 linear feet (8 boxes)

**LANGUAGE:** English

**SUMMARY:** The papers document Henry Margenau's professional career as a physicist and philosopher of science. They chiefly consist of correspondence and published and unpublished writings.

**ONLINE FINDING AID:** To cite or bookmark this finding aid, please use the following link: <https://hdl.handle.net/10079/fa/mssa.ms.0129>

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## Requesting Instructions

To request items from this collection for use in the Manuscripts and Archives reading room, please use the request links in the HTML version of this finding aid, available at <https://hdl.handle.net/10079/fa/mssa.ms.0129>.

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Key to the container abbreviations used in the PDF finding aid:

b.      box  
f.      folder

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## Administrative Information

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### Immediate Source of Acquisition

Gift of Henry Margenau, 1977 and 1994, and transferred from the Kline Science Library, 1977.

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## Conditions Governing Access

The materials are open for research.

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## Conditions Governing Use

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## Preferred Citation

Henry Margenau Papers (MS 129). Manuscripts and Archives, Yale University Library.

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## Biographical / Historical

Henry Margenau was born on April 30, 1901 in Bielefeld, Germany. Largely self-taught and ambitious, Margenau was trained to be an elementary school teacher. In 1922, however, he emigrated from Germany, settled in Nebraska with a distant relative, and worked as a farm hand. He attended Midland Lutheran College from 1923 to 1924, majored in Latin, and completed his degree in one year. He came to physics quite by accident, when he accepted an assistantship to Dr. Moore, a research physicist at the University of Nebraska, in the summer of 1924. In addition to assisting Dr. Moore, Margenau took courses in physics and mathematics, and in the fall of 1925, began taking graduate level courses. By the spring of 1926, he had a master of science degree in physics. His benefactor and mentor died, but Margenau was retained by the university to continue doing research and to work as an instructor.

Margenau's master's thesis on the Zeeman Effect was published, and he was offered a fellowship from the Yale University physics department in 1927. After two years at Yale, Margenau had completed his Ph.D. in physics. He then went to study quantum theory in Europe on a Sterling Fellowship and returned to Yale in the fall of 1931, with the promise of an assistant professorship after an additional year as an instructor. He was assistant professor of physics from 1931 to 1939, at which time he was made an associate professor.

During World War II, Margenau stayed at Yale and continued to teach. With the arrival, in 1941, of Ernst Cassirer, a prominent philosopher and physicist, Margenau's interests shifted to philosophy. Cassirer and Margenau co-taught a graduate course on Kant and Neo-Kantianism, and in 1944 collaborated on an English edition of *Determinismus and Indeterminismus in Der Modern Physik*. Unfortunately, Cassirer died before the completion of the project, and Margenau did not continue the work in his absence. Rather than augment and amplify the text as had been planned, Margenau left it as it was, and added a preface over his name as well as a new bibliography. The book was eventually published in 1956.

In 1945 Margenau was promoted to full professor and, in 1950, he received the first joint appointment in physics and philosophy to be offered by Yale, the Eugene Higgins Professorship of Physics and Natural Philosophy. Margenau retired Emeritus from Yale in 1969, but continued to research and write about physical phenomena as well as philosophy and ethics. In the 1960s he developed a considerable interest in the problems of parapsychology, psychical research, and the physical reality of consciousness. *Einstein's Space and Van Gogh's Sky* (1982), for example, a book Margenau wrote with psychologist Lawrence LeShan, is an exploration of psychic phenomena and perception.

Though Margenau was affiliated with Yale from the 1920s onward, his reputation and professional activities took him all over the world and to many institutions. In 1939 he received a fellowship from the Institute of Advanced Study at Princeton, where he worked with Eugene Wigner and Archibald Wheeler. He was visiting professor at the University of California in 1947, and at the University of Heidelberg in 1953 and 1971. He was at Carleton College in 1953-1954, and at the University of Tokyo under the auspices of a Fulbright Lectureship in 1960. He taught at Whitman College in 1971-1972, and was a Hadley Fellow at Bennington College in 1975. He was a Joseph Henry Lecturer in 1954, and a National Phi Beta Kappa lecturer in 1965. Margenau's professional memberships included the American Physics Society, the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the Académie Internationale de Philosophie des Sciences in Brussels. He was president of the Philosophy of Science Association and the New England section of the American Physics Society. Margenau served as vice president of the Connecticut Academy of Science and was a member of Phi Beta Kappa and Sigma Xi.

Henry Margenau has been referred to as the most important philosopher of physics of his generation and one of the most eminent philosophers of science in the twentieth century. He was the recipient of a number of honors and awards, including the San Marcos University Medal in 1951, the Century Award from Michigan State University in 1955, and the Devane Medal in 1969. He was in great demand as a consultant and worked in that capacity for MIT's Radiation Laboratory, the Atomic Energy Commission, the National Bureau of Standards, Argonne National Laboratories, General Electric, and the Lockheed Corporation. The latter, for example, had been assigned by the Air Force to study the physical processes taking place in the fireball created by exploding the first hydrogen bomb. Margenau's early work on spectral line measurement led Lockheed to seek his expertise; measuring the spectral lines produced by the bomb's explosion was the key to discerning the bomb's internal heat, and necessary for the success of the project.

Margenau was a prolific author. His books include: *Physics: Principles and Applications* (1949), *The Nature of Concepts* (1950), *Open Vistas* (1961), *Ethics and Science* (1964), *Scientific Indeterminism and Human Freedom* (1968), *The Scientist* (1965), *Integrative Principles of Modern Thought* (1972), and *The Miracle of Existence* (1984). He coauthored *Foundations of Physics* (1936), with R. Bruce Lindsay; *The Mathematics of Physics and Chemistry* (1943), with George Murphy; *Theory of Intermolecular Forces* (1969, 1971), with N. Kestner; and co-edited *Cosmos, Bios, Theos* (1992), with Roy Abraham Varghese. Margenau also published numerous physics and philosophical articles, and served as editor of such journals as *Foundations of Physics*, *Main Currents in Modern Thought*, *Journal of the Philosophy of Science*, *American Journal of Science*, *Reviews of Modern Physics*, *Journal of Chemistry and Physics*, *Journal of Quantitative Spectroscopy and Radiative Transfer*. He was consulting editor for the *Time Life Science Series*.

Henry Margenau became a citizen of the United States in 1930, and married Louise M. Noe in 1932. They have three children: Rolf Carl, Annemarie Luise, and Henry Frederick.

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## Scope and Contents

The Henry Margenau Papers are arranged in two series: Personal and Correspondence, and Writings. The collection reveals very little about Margenau's personal life, but it does afford the researcher a good picture of his personality. Through his philosophical and ethical writings and speeches, the researcher can study the workings and development of Margenau's philosophy and thought. Specifically, the researcher can trace his evolution from a specialist in spectral line broadening to a philosopher of science, religion, ethics, and the power of the human mind. Margenau's correspondence and publications reveal not only the great diversity of thought within the scientific community, but also that the establishment of scientific "truth" is a long and complex process. For example, the collection documents the disagreement and tension surrounding the acceptance of such theories as relativity and quantum mechanics, as well as the serious attention prominent scientists paid to notions like extrasensory perception and parapsychology. Margenau's papers also reveal the connection between science, government, and industry. Rather than work solely within the walls of a university, Margenau's prominence at Yale led him to consult for the Argonne National Laboratories, General Electric, and the Lockheed Corporation, among others, and he was long affiliated with the Office of Naval Research.

There are biographical musings made by Margenau in June 1963 on five Soundscriber discs in Historical Sound Recordings (HSR) in the Yale University Library. The researcher must make an appointment with the HSR curator in order to listen to the discs.

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## **Arrangement**

The papers are arranged in two series: Series I. Personal and Correspondence, 1931-1989. Series II. Writings, 1927-1990.

## Collection Contents

### Series I: Personal and Correspondence, 1931-1989

The first folder in this series, "Personal," includes Margenau's personal creed, notes, biographical newspaper clippings, and reviews of *Vistas in Physical Reality* (1976), a festschrift celebrating Margenau's career. The correspondence in the series is arranged alphabetically by last name of the correspondent and includes both incoming and outgoing letters. Much of the correspondence consists of travel arrangements, academic recommendations, and thank you notes. A large portion of the series pertains to Margenau's retirement in May, 1969. Yale celebrated the event with a symposium in Margenau's honor, and he received numerous letters of congratulation. Although Margenau maintained contact with many physicists, philosophers, psychologists, and parapsychologists, the volume of correspondence with them is rather slight. There are, however, quite interesting letters that deal with major questions in the field of physics. Margenau, for example, discusses probability theory with Walter Brattain, parapsychology with Gardner Murphy, and the Einstein-Podolski-Rosen Paradox with Nick Fremont-Smith. The letters tend to be brief, and center primarily around articles and published responses to them. Despite the routine nature of many of the letters in the series, as a whole it provides broad insight into Margenau's philosophy and interactions within and outside of the scientific community.

b. 1, f. 1	Personal	1948-1977
	Correspondence	
b. 1, f. 2	A-C	1931-1983
b. 1, f. 3	Benor, Daniel [includes three papers by Sir John C. Eccles]	1982
b. 1, f. 4	D-E [includes letter from Albert Einstein in German]	1936-1969
b. 1, f. 5	F-H [includes equation by Enrico Fermi]	1955-1988
b. 1, f. 6	J-L	1940-1986
b. 1, f. 7-8	Keppel, John	1979
b. 1, f. 9	M-O	1956-1983
b. 1, f. 10	P-R	1955-1971
b. 1, f. 11	S-U	1959-1969
b. 1, f. 12	V-Z	1932-1989
b. 1, f. 13	Unidentified surnames	1969-1986

## Series II: Writings, 1927-1990

This series is comprised of five sections: articles; books; discussions; speeches, lectures, symposia; and other. Each section is arranged alphabetically by title, and, unless otherwise specified, contains materials that were written by Henry Margenau. The first folder in the series contains a list of Margenau's publications, but it is undated and not all inclusive.

The first folder in the articles section (1929-1980) contains several book reviews written by Margenau. The remainder of the section is divided into Margenau's philosophical and scientific articles. The philosophical articles cover Margenau's views on physics and its role in the world, and his personal ethical and religious thoughts and concerns. They also include some musings on parapsychology and extra sensory perception. The scientific articles are highly technical essays in various fields of physics. They include useful information on who funded Margenau's research, the purposes behind it, and the uses to which it was put. They therefore provide context for the researcher who might lack a specialized knowledge of physics.

The books section (1943-1985) primarily consists of correspondence, reviews, drafts, and notes regarding a selection of Henry Margenau's books. They include: *Einstein's Space and Van Gogh's Sky* (1982), *Ethics and Science* (1964), *The Mathematics of Physics and Chemistry* (1943), *The Miracle of Existence* (1984), *Open Vistas* (1961), *Physics and Philosophy* (1978), one chapter from an unidentified book, and one chapter from *Measurement in Quantum Mechanics*, an unpublished collaboration with Eugene Wigner.

For *Physics and Philosophy*, a compilation of Margenau's articles on the philosophy of physics, Margenau was asked to write a brief autobiographical sketch to introduce the collection. It is filed under the book's title as a draft, and offers the most comprehensive biographical information of Margenau available in the collection, including his work as a consultant. Margenau also wrote a preface to the book, in which he describes the long and intimate relationship between physics and philosophy. The editor of the volume, Mario Bunge, also offers biographical information about Margenau, documenting his importance in both physics and philosophy. Bunge's biographical information can be found on the page directly before Margenau begins his autobiography.

Of special note is the correspondence that followed in the wake of the publication of *Ethics and Science*. In a folder Margenau himself titled "reviews and controversy," there is an unfavorable review by philosopher Ernest Nagel. Margenau and Nagel carried on a dialogue in the pages of the *New York Times* regarding the role of scientists in matters of ethics and philosophy. Margenau also sent copies of the review and his reply to a number of friends and colleagues, and used what he considered the "controversy" as a starting point for at least two speeches he later delivered. Margenau's strong reaction to Nagel's opinion affords great insight into Margenau's personality, as well as into his views on the role of scientists, and others, in the fields of ethics and philosophy.

Speeches, Lectures, Symposia (1950-1987) is comprised of writings Margenau prepared for public appearances. They document a wide-range of subject matter, though they are weighted heavily toward philosophical, ethical, and religious matters. Margenau was concerned that the sciences be integrated into society, and he felt that the teaching of physics was central to the cultural and ethical concerns of America. For example, in a 1953 speech, "Fusion or Fission: Can the Art of Living Together Prevail Over the Science of Destruction?" Margenau used common conceptions about scientific inquiry to compare communism, a dogma supported by ideology, to democracy, a way of life supported by facts. His aim was to demonstrate the power ideas may have over facts in certain circumstances. This is just one example of how Margenau saw his role as a scientist and a patriot merge with his role as an intellectual.

Discussions (1934-1972) contains seven short published pieces on a variety of topics, and one typescript, accompanied by a letter from Eugene Wigner. The pieces were often collaborative, and fell under the rubric "discussion" or "news and views" in the publications in which they appeared. For the most part they are confined to clarifications of published articles, responses to criticism, and elaborations of theories or new ideas.

The Other (n.d.) section contains writings that have not been identified for date or context. With the exception of "Annotated Writings of Others," however, they were all written by Margenau.



b. 2, f. 14	Publications by Henry Margenau	undated
	Articles	
b. 2, f. 15	Book Reviews	1929-1980
	Philosophy	1931-1981
b. 2, f. 16	"Advantages and Disadvantages of Various Interpretations of the Quantum Theory," English	1954
b. 2, f. 17	"An Approach to A Science of Psychical Research" [with Lawrence LeShan] English	1980
b. 2, f. 18	"Are There Particles Traveling Faster Than Light?," English	undated
	"Atomic and Molecular Theory Since Bohr" (three parts)	
b. 2, f. 19	"Historical Survey" [with Arthur Wightman] English	1944
b. 2, f. 20	"Logical and Mathematical Survey" [with Arthur Wightman] English	1944
b. 2, f. 21	Résumé of Specific Results [with R.B. Setlow]	1945
b. 2, f. 22	"Can Time Flow Backwards?," English	1954
b. 2, f. 23	"Causality," English	1960
b. 2, f. 24	"Causality and Modern Physics," English	1931
b. 2, f. 25	"Causality in Quantum Electrodynamics," English	1954
b. 2, f. 26	"The Competence and Limitations of Scientific Method," English	1955
b. 2, f. 27	"Critical Points in Modern Physical Theory," English	1937
b. 2, f. 28	"Deductive Method in the Physical Sciences," English	1953
b. 2, f. 29	"Die Philosophie im xx. Jahrhundert" [German] English	1959
b. 2, f. 30	"Effects of an Observer on Measurements in Quantum Mechanics," English	undated
b. 2, f. 31	"Einstein's Conception of Reality," English	1949

## Articles &gt; Philosophy (continued)

b. 2, f. 32	"The Emergence of Integrative Concepts," English	1972
b. 2, f. 33	"The Exclusion Principle and Its Philosophical Importance," English	1944
b. 2, f. 34	"The Field Concept in Modern Science," English	1959
b. 2, f. 35	"Fields," English	undated
b. 2, f. 36	"Foundations of the Unity of Science," English	1941
b. 2, f. 37	"Integrative Education in the Sciences," English	1967
b. 2, f. 38	"Intercultural Communication of Ethical Judgments," English	1963
b. 2, f. 39	"Knowledge, Faith and Physics," English	1954
b. 2, f. 40	"The Meaning and the Faith of Science," English	1957
b. 2, f. 41	"Meaning and Scientific Status of Causality," English	1934
b. 2, f. 42	"Measurements and Quantum States" (2 parts) English	1963
b. 2, f. 44	"Measurement in Quantum Mechanics," English	undated
b. 2, f. 43	"Measurements in Quantum Mechanics," English	1963
b. 2, f. 45	"Metaphysical Elements in Physics," English	1941
b. 2, f. 46	"The Method of Science: A Technical Summary," English	1945
b. 2, f. 47	"Methodology of Modern Physics," English	1935
b. 2, f. 48	"The Modern Predicament," English	1957
b. 2, f. 49	"The Modern Predicament and Its Possible Removal," English	1957
b. 2, f. 50	"Natural Science and Liberal Arts," English	1945
b. 2, f. 51	"The New Style of Science," English	1963

## Articles &gt; Philosophy (continued)

b. 2, f. 52	"On the Frequency Theory of Probability," English	1945
b. 3, f. 53	"Perspectives of Science," English	1959
b. 3, f. 54	"Phenomenology and Physics," English	1944
b. 3, f. 55	"The Philosophical Legacy of Contemporary Quantum Theory," English	1966
b. 3, f. 56	"Philosophical Perspectives of the Science of Modern Physics" [one page in English, the rest in Spanish] English	1956
b. 3, f. 57	"Philosophical Problems Concerning the Meaning of Measurement in Physics," English	1958
b. 3, f. 58	"Philosophy of Physical Science in the Twentieth Century" [with J.E. Smith] English	1958
b. 3, f. 59	"Physics and Ontology," English	1952
b. 3, f. 60	"Physics and the Doctrine of Reductionism," English	1981
b. 3, f. 61	"A Principle of Resonance," English	1957
b. 3, f. 62	"Probability and Causality in Modern Physics," English	1932
b. 3, f. 63	"Probability, Many-Valued Logics, and Physics," English	1939
b. 3, f. 64	"The Problem of Physical Explanation," English	1929
b. 3, f. 65	"The Pursuit of Significance," English	1967
b. 3, f. 66	"Quantum Mechanics, Free Will and Determinism," English	1967
b. 3, f. 67	"Reality in Quantum Mechanics," English	1949
b. 3, f. 68	"Relativity: An Epistemological Appraisal" [with Richard Mould] English	1957
b. 3, f. 69	"Report on the Recent Developments in the Philosophy of Quantum Mechanics" [with John Compton] English	1950

## Articles &gt; Philosophy (continued)

b. 3, f. 70	"Science and Ethics, Their Parallelism and some of its Consequences," English	1979
b. 3, f. 71	"The Structure of the Philosophy of Science" [including a note from Margenau, 1990] English	undated
b. 3, f. 72	"The Teaching of Intermediate Physics," English	1938
b. 3, f. 73	"Theory and Scientific Development," English	undated
b. 3, f. 74	"Western Culture, Scientific Method and the Problem of Ethics," English	1947
b. 3, f. 75	"Why Teach Philosophy of Science?," English	1957
	Physics	1927-1974
b. 4, f. 76	"Absorption Coefficient and Microwave Conductivity of Plasmas" [with P. Malozzi] English	1963
b. 4, f. 77	"Asymmetries of Pressure Broadened Spectral Lines," English	1933
b. 4, f. 78	"Binding Energies of Light Nuclei," English	1939
b. 4, f. 79	"Binding Energy of He6 and Nuclear Forces," English	1939
b. 4, f. 80	"The Binding Energy of Li6" [with Kenneth G. Carroll] English	1938
b. 4, f. 81	"Collision Theories of Pressure Broadening of Spectral Lines" [with J.H. Van Vleck] English	1949
b. 4, f. 82	"Collisions of Alpha-Particles in Deuterium" [with E. Pollard] English	1935
b. 4, f. 83	"Collisions of Alpha-Particles in Hydrogen" [with E. Pollard] English	1935
b. 4, f. 84	"The Complex Neutron," English	1934
b. 4, f. 85	"Conduction and Dispersion of Ionized Gases at High Frequencies," English	1946
b. 4, f. 86	"Conductivity of Plasmas to Microwaves" [with Edward A. Desloge and Steven W. Matthyse] English	1958

## Articles &gt; Physics (continued)

b. 4, f. 87	"Correlation Between Measurements in Quantum Theory" [with Robert Nyden Hill] English	1961
b. 4, f. 88	"Dependence of Ultra-Violet Reflection of Silver on Plastic Deformation," English	1929
b. 4, f. 89	"Effects of Electron Collisions on the Width of Spectral Lines" [with Bennett Kivel] English	1955
b. 4, f. 90	"Electron Conductivity and Mean Free Paths" [with Fred Adler] English	1950
b. 4, f. 91	"Electron Impact Broadening of Spectral Lines" [with B. Kivel and S. Bloom] English	1954
b. 4, f. 92	"The Equation State of Real Gases," English	1931
b. 4, f. 93	"Excited States of the Alpha-Particle," English	1938
b. 4, f. 94	"The Exclusion Principle and Measurement Theory," English	1966
b. 4, f. 95	"Experimental Evidence Involving the Field of the Deuteron," English	1935
b. 4, f. 96	"Fields in Physics and Biology: the Significance and Difficulties of Applied Field Theory," English	1959
b. 4, f. 97	"Fields Within Fields Within Fields," English	1974
b. 4, f. 98	"The Forces Between a Hydrogen Molecule and a Hydrogen Atom," English	1944
b. 4, f. 99	"The Forces Between Hydrogen Molecules" [with Arthur A. Evett] English	1953
b. 4, f. 100	"Frequency Shifts in Hyperfine Splitting of Alkalis Caused by Foreign Gases" [with P. Fontana and L. Klein] English	1959
b. 4, f. 101	"A Correction," English	1961
b. 4, f. 102	"Fysikkens Oprinnelse og Utvikling," English	1947
b. 4, f. 103	"General Theory of Resonance Between Dipole Molecules" [with Dana T. Warren] English	1937

## Articles &gt; Physics (continued)

b. 4, f. 104	"High-Frequency Breakdown of Air" [with Donald Kelly] English	1960
b. 4, f. 105	"Interaction of Alpha-Particles," English	1941
b. 4, f. 106	"Inversion Frequency of Ammonia and Molecular Interaction," English	1949
b. 4, f. 107	"Ion Clustering" [with Stanley Bloom] English	1952
b. 4, f. 108	"Is the Mathematical Explanation of Physical Data Unique?," English	1960
b. 4, f. 109	"Line Broadening by Electrons: Validity of Simple Theories" [with Ronald E. Meyerott] English	1955
b. 4, f. 110	"Line Broadening of an Impurity Spectrum in Silicon" [with Douglas Sampson] English	1956
b. 4, f. 111	"Magnetic Moments of Odd Nuclei" [with Eugene Wigner] English	1940
b. 4, f. 112	"The Meaning of 'Elementary Particle,'" English	1951
b. 4, f. 113	"Microwave Conductivity of Slightly Ionized Air," English	1959
b. 4, f. 114	"Natural Width of K $\alpha$ -Lines," English	1934
b. 4, f. 115	"Nonadditivity of Intermolecular Forces" [with J. Stamper] English	1967
b. 4, f. 116	"Normal States of Nuclear Systems" [with Dana Warren] English	1937
b. 4, f. 117	"Note on Pressure Effects of Band Spectra," English	1936
b. 4, f. 118	"Note on the Calculation of Van Der Waals Forces," English	1931
b. 4, f. 119	"Note on the Quantum Dynamical Correction of the Equation of State," English	1932
b. 4, f. 120	"Note on the Validity of Methods Used in Nuclear Calculations" [with Dana T. Warren] English	1937
b. 4, f. 121	"Nuclear Energy Levels and the Model of a Potential Hole," English	1934
b. 4, f. 122	"On Film Formation of Water Flowing Through Thin Cracks," English	1945

## Articles &gt; Physics (continued)

b. 4, f. 123	"On the Forces Between Positive Ions and Neutral Molecules," English	1941
b. 4, f. 124	"On the Interaction of Closed Shells" [with Philip Rosen] English	1953
b. 5, f. 125	"Physical Processes in the Recovery of TR Tubes," English	1946
b. 5, f. 126	"The Physics and Semantics of Quantum Measurement: A Reply to Prugovecki" [with James L. Park] English	1973
b. 5, f. 127	"Pressure Broadening on the Inversion Spectrum of Ammonia," English	1949
b. 5, f. 128	"Pressure Effects of Foreign Gases on Sodium D-Lines" [with William W. Watson] English	1933
b. 5, f. 129	"Pressure Effects of Nitrogen Potassium Absorption Lines," English	1933
b. 5, f. 129	"Pressure Shifts of Krypton Lines" [with William W. Watson] English	1937
b. 5, f. 130	"Progression of Nuclear Resonance Levels with Atomic Number," English	1934
b. 5, f. 132	"Quantum Dynamical Correction for the Equation of State of Real Gases," English	1931
b. 5, f. 133	"Quantum Mechanical Description," English	1935
b. 5, f. 134	"Quantum Theory of Line Broadening by an Ionic Plasma," English	1955
b. 5, f. 135	"Quantum Theory of Spectral Line Broadening" [with Stanley Bloom] English	1953
b. 5, f. 136	"Relativistic Magnetic Moment of a Charged Particle," English	1939
b. 5, f. 137	"Relativity and Nuclear Forces," English	1936
b. 5, f. 138	"Resonance Interaction Between Deuterons and Alpha-Particles," English	1935
b. 5, f. 139	"The Role of Definitions in Physical Science, with Remarks on the Frequency Definition of Probability," English	1942
b. 5, f. 140	"Role of Quadruple Forces in Van Der Waals Attractions," English	1931

## Articles &gt; Physics (continued)

b. 5, f. 141	"Second Virial Coefficient for Gases: A Critical Comparison Between Theoretical and Experimental Results," English	1930
b. 5, f. 142	"Shift of the Transmission Band of Silver by Cold Working," English	1932
b. 5, f. 143	"Simultaneous Measurability in Quantum Theory" [with James L. Park] English	1968
b. 5, f. 144	"Stark Effects in Line Broadening" [with Marvin Lewis] English	1957
b. 5, f. 145	"Statistical Theory of Radiative Processes in Plasmas," English	1966
b. 5, f. 146	"Statistics of Excited Energy States of Nuclei," English	1941
b. 5, f. 147	"Structure of Spectral Lines From Plasma" [with Marvin Lewis] English	1959
b. 5, f. 148	"Surface Energy of Liquids," English	1931
b. 5, f. 149	"Tachyons," English	1969
	"Theory of High Frequency Gas Discharges" [article in four parts; part III is missing]	
b. 5, f. 150	I. "Methods for Calculating Electron Distribution Functions,"	1948
b. 5, f. 151	II. "Harmonic Components of the Distribution Function,"	1948
b. 5, f. 152	IV. "Note on the Similarity Principle,"	1948
b. 5, f. 153	"Theory of Magnetic Resonance in Nitric Oxide" [with Allan Henry] English	1950
b. 5, f. 154	"Theory of Plasma Radiation" [with P. Malozzi] English	1966
b. 5, f. 155	"Theory of Pressure Effects of Foreign Gases on Spectral Lines," English	1935
b. 5, f. 156	"Theory of Pressure Effects on Alkali Doublet Lines," English	1958
b. 5, f. 157	"Theory of Pressure Shifts of HC1 Lines Caused by Noble Gases" [with H.C. Jacobson] English	1963
b. 5, f. 158	Über die Veränderlichkeit der Anzahl dreier Metallelektrinen mit der Temperatur,	1930
b. 5, f. 159	"Van der Waals Forces," English	1939



## Articles &gt; Physics (continued)

b. 5, f. 160	"Van der Waals Forces in Magnetic Fields," English	1951
b. 5, f. 161	"Variational Theory of the Alpha-Particle" [with Warren A. Tyrrell, Jr.] English	1938
b. 5, f. 162	"The Zeeman Effect in the Cerium Spectrum Between 3000 and 5000A," English	1927
b. 5, f. 163	Zeitschrift Für Physik [three articles in German]	
b. 5, f. 163	"Zur Theorie der Moleklarkrafte bei Dipolgasen," English	1930
b. 5, f. 163	"Zur Abweichung vom Ohmschen Gesetz bei hohen Feldstarken," English	1930
b. 5, f. 163	"Die Abweichungen vom Ohmschen Gesetz bei hohen Stromdichten der Sommerfeldschen Elektronetheorie," English	1929
Books		
	<i>Einstein's Space and Van Gogh 's Sky</i>	1982
b. 6, f. 164	Background material [includes material from <i>Miracle of Existence</i> ]	
Correspondence		
b. 6, f. 165	General [majority from John Archibald Wheeler]	1984-1986
b. 6, f. 166	Publisher	1979-1984
b. 6, f. 167	Reviews	1979-1984
<i>Ethics and Science</i>		
	<i>Ethics and Science</i>	1964
Correspondence		
b. 6, f. 168	General	1964-1965
b. 6, f. 169	Nagel, Ernest	1964-1965
b. 6, f. 170	Reviews [includes several responses by Margenau]	1964-1981
b. 6, f. 171	<i>The Mathematics of Physics and Chemistry, 2nd Edition</i> [review]	1956
b. 6, f. 172	<i>The Mathematics of Physics and Chemistry, Vol. II</i> , [reviews]	1964-1965
b. 6, f. 173	<i>Measurement in Quantum Mechanics</i> ["Some Comments on..."; book was never published] English	1971
<i>Miracle of Existence</i>		
	<i>Miracle of Existence</i>	1984
b. 6, f. 174	"An Afterthought," English	1985
b. 6, f. 175	Reviews and notices	1984-1986

## Books (continued)

	<i>Open Vistas</i>	1961
b. 6, f. 176	Correspondence [with Yale University Press]	1962-1980
b. 6, f. 177	Reviews	1961-1962
b. 6, f. 178	<i>Perspectives in Quantum Theory</i> [draft of a chapter called, "The Logic of Noncommutability of Quantum Mechanical Operations and its Empirical Consequences"]	1971
	<i>Physics and Philosophy</i>	1978
	Correspondence	
b. 6, f. 179	Bunge, Mario	1976-1981
b. 6, f. 180	Publisher	1977-1978
	Drafts	
b. 6, f. 181	Autobiographical introduction	undated
b. 6, f. 182	Preface	undated
b. 6, f. 183	Handwritten pages	undated
b. 6, f. 184	Reviews	1978-1981
b. 6, f. 185	"What is Scientific Method" [chapter in unidentified book] English	undated
b. 6, f. 186	Discussions	1934-1972
	Speeches, Lectures, Symposia	1950-1987
b. 7, f. 187	"Anatomy of a Sacred Cow" [Connecticut College] English	1956
b. 7, f. 188	"Bacon and Modern Physics: A Confrontation" [conference commemorating the 400th anniversary of the birth of Francis Bacon, Pennsylvania] English	1961
b. 7, f. 189	"Causality" [Florence, Italy] English	1968
b. 7, f. 190	"The Common Denominator of Science and Religion" [Carleton College, Minnesota] English	1957
b. 7, f. 191	"Elegance as a Criterion of Validity in Science" [Rollins College, Florida] English	1960
b. 7, f. 192	"ESP in the Framework of Modern Science" [American Society for Psychical Research Forum on Extrasensory Perception] English	1966
b. 7, f. 193	"Ethics and Science" [International Conference on the Unity of the Sciences] English	1977

## Speeches, Lectures, Symposia (continued)

b. 7, f. 194	"Evidence of Teleology in Scientific Theories" [Sicily] English	1977
b. 7, f. 195	"For Lars" [Eulogy for Lars Onsager, Yale University] English	1976
b. 7, f. 196	"Fusion or Fission: Can the Art of Living Together Prevail over the Science of Destruction?" English	1953
b. 7, f. 197	How Science Finds Truth and Reality — With Some Thoughts on Religion [Star Island Conference]	1954
b. 7, f. 198	"Integration in the Sciences" [Cleveland, Ohio] English	1950
b. 7, f. 199	"Introduction" [Fulbright Conference] English	1962
b. 7, f. 200	"Ionization Phenomena in Gases," English	1959
b. 7, f. 201	"The New Faith of Science" [University of Wichita, Kansas] English	1953
b. 7, f. 202	"The New View of Man in his Physical Environment" [Michigan State College, Michigan] English	1955
b. 7, f. 203	"Note on the Calculation of Exchange Forces" [Office of Naval Research, Washington, D.C.] English	1951
b. 7, f. 204	"Objectivity in Quantum Mechanics" [Delaware Seminar on the Foundation of Physics] English	1967
b. 7, f. 205	"The Philosophical Legacy of Quantum Mechanics" [Washington, D.C.; Amsterdam] English	1977
b. 7, f. 206	"Philosophy of American Science" [University of Tokyo] English	1960-1961
b. 7, f. 207	"Philosophy of Science" [Florence, Italy] English	1968
b. 7, f. 208	Propriétés Optiques et Acoustiques des Fluides Comprimés [Bellevue]	1957
b. 8, f. 209	"The Role of Natural Philosophy in Multidisciplinary Research and Teaching," English	1979
b. 8, f. 210	"The Role of Scholarship in an Age of Science" [University of Wyoming] English	1964
b. 8, f. 211	"Science and Philosophical Perspectives" [Science Symposium, Fort Monmouth, New Jersey] English	1966

## Speeches, Lectures, Symposia (continued)

b. 8, f. 212	"Science and Society" [public talk at Town Hall, Los Angeles, program plus text] English	1956
b. 8, f. 213	"Science in Perspective" [Gerstein Lecture, York University, Toronto] English	1967
b. 8, f. 214	"Science, Philosophy and Religion" [Dalhousie University, Halifax] English	1960
b. 8, f. 215	"The Scientific Basis of Value Theory [Conference of New Knowledge in Human Values] English	1957
b. 8, f. 216	"The Search for Meaning in a Senseless World" [Hartwick College, inaugurating Margenau Lecture Series] English	1967
b. 8, f. 217	"The Search for Meaning in a Troubled World" [Hadley Lecture] English	1975
b. 8, f. 218	"Some Thought on Science and the Doctrine of Creation" [Duodecim Theological Society, New York] English	1955
b. 8, f. 219	"The Teaching of Science" [Pennsylvania State University] English	1960
b. 8, f. 220	"Theoretical Physics and Biology" [Versailles Conference, Institut de la Vie] English	1967
b. 8, f. 221	"Theory of Pressure Shifts of HC1 Lines Caused by Noble Gases" [Israel Conference; includes notes, drafts, some correspondence] English	1961?
	Untitled talks	
b. 8, f. 222	Artificial Intelligence and the Human Mind [symposium, Yale University]	1986
b. 8, f. 223	The Nature of Concepts, Their Inter-Relation and Role in Social Science [proceedings of the Stillwater Conference, Oklahoma]	1950
b. 8, f. 224	Oberwalfach Symposium	undated
b. 8, f. 225	Remsen Bird Lecture [Occidental College; program only]	1956
b. 8, f. 226	Spontaneous Phenomena [conference, Cambridge University]	1967
b. 8, f. 227	Whitman College Lectures	1971-1972
	Other	
b. 8, f. 228	"Ancient History of Physics," English	undated
b. 8, f. 229	"ESP and Statistics," English	undated

## Other (continued)

b. 8, f. 230	"Methodology" [essay in application for funds for the Foundation for Integrated Education] English	undated
b. 8, f. 231	"What is a Probability Field?" English	undated
	Untitled	
b. 8, f. 232	Notes and equations	undated
b. 8, f. 233	Unidentified handwritten manuscript	undated
b. 8, f. 234	Annotated writings of others	

## **Selected Search Terms**

The following terms have been used to index the description of this collection in the Library's online catalog. They are grouped by name of person or organization, by subject or location, and by occupation and listed alphabetically therein.

### **Subjects**

Nuclear physics  
Philosophy  
Physics  
Quantum theory

### **Occupations**

Philosophers  
Physicists

### **Names**

Brattain, Walter H. (Walter Houser), 1902-1987  
Eccles, John C. (John Carew), 1903-1997  
Einstein, Albert, 1879-1955  
Margenau, Henry, 1901-1997

### **Corporate Body**

United States. Office of Naval Research