
Guide to the Hans Lewy Papers

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Collection number: BANC MSS 91/147 cz

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Date Completed:

September 2003

Encoded by:

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Collection Summary

Collection Title: Hans Lewy papers,

Date (inclusive): 1906-1999

Collection Number: BANC MSS 91/147 cz

Creator: Lewy, Hans, 1904-

Extent: Number of containers: 2 cartons, 1 oversize folder
Linear feet: 2.55 linear feet

Repository: The Bancroft Library.

Berkeley, California 94720-6000

Abstract: Consists of correspondence, writings, teaching materials, and notes relating to Lewy's career as a mathematician in Germany and the United States. Also included are biographical materials and photographs. This collection includes very few materials relating to the Loyalty Oath controversy at UC Berkeley.

Physical Location: For current information on the location of these materials, please consult the Library's online catalog.

Languages Represented: English

Access

Collection open for research.

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Preferred Citation

Hans Lewy papers. BANC MSS 91/147 cz, The Bancroft Library, University of California, Berkeley.

Printed materials have been transferred to the book collection of The Bancroft Library.

Audio-cassettes have been transferred to microform collection of The Bancroft Library.

Acquisition Information

The Hans Lewy Papers were given to The Bancroft Library by Helen Lewy on January 26, 1989, with additions in February 2000.

Funding

Funding provided by Helen Lewy.

Biographical Note

Hans Lewy was born on October 20, 1904 in Breslau, Germany (now Wrocław, Poland). He received his Ph.D. in mathematics in 1926 from the University of Göttingen, where, along with Richard Courant, he pursued the study of elliptic and hyperbolic problems as Privatdozent (lecturer) until 1929. From 1929-1930 he studied in Rome under the sponsorship of the Rockefeller Foundation, and with the help of the distinguished French mathematician Jacques Hadamard he continued his fellowship in Paris from 1930-1931.

Lewy left Germany in 1933, soon after Adolph Hitler came to power. After two years as a lecturer at Brown University, he joined the UC Berkeley Department of Mathematics in 1935. Lewy was appointed associate professor at in 1939 and full professor in 1945. From February 1943 until July 1945 Lewy worked in mathematical research at the Ballistic Research Laboratory at the Aberdeen Proving Grounds in Maryland and with the Office of Naval Research in New York.

In 1947 Lewy married artist and writer Helen Crosby. The Lewys' honeymoon trip around the world included three months in China, two of which Lewy spent in Chengtu, Szechuan teaching a course on water waves. When he refused to sign the UC Board of Regents' Loyalty Oath in 1950, Lewy was dismissed along with many other university employees. He spent 1952-1953 at Harvard and Stanford before he was reinstated at UC Berkeley, after the Loyalty Oath was ruled by the California Supreme Court to be unconstitutional.

In 1957 Lewy contributed to the theory of differential equations through his example of a linear equation without a solution. He later received the American Mathematical Society's Steele Prize for this work in 1979. Lewy's contributions to the work on differential equations were instrumental in the later development of high-speed computers. From 1959-1960 Lewy visited the emerging mathematical center at the University of Pisa where he helped to introduce the area of variational inequalities. The Accademia dei Lincei invited him to Rome in 1969-1970 and in 1972 he was elected by that society as a Foreign member. He retired in 1972 but continued his research, sharing the 1984/1985 Wolf Foundation Prize, and receiving an honorary doctorate from Bonn University in 1986. Hans Lewy died of leukemia in Berkeley on August 23, 1988.

Scope and Content

The Hans Lewy Papers, ca. 1906-1999, consist of correspondence, writings, teaching materials, and notes related to his career as a mathematician in Germany and in the United States. Also included are biographical materials and photographs. This collection is divided into 6 series: Correspondence, Writings, Writings by Others, Teaching Materials, Professional Activities, and Personal Papers.

The bulk of the correspondence consists of letters between Lewy and professional colleagues. While on fellowship in Paris in the early 1930's, Lewy became acquainted with the French mathematician Jean Leray, who was later captured by the Germans. The letters of Jean Leray make up a large part of the incoming correspondence, spanning from his years as a prisoner of war through the 1980's. Also included are many letters from Richard Courant, Lewy's supervisor at Göttingen. The outgoing correspondence includes Lewy's letters from his sabbatical /honeymoon trip to Europe in 1947, and describe the post war living conditions.

During this European trip Lewy also wrote a selection of reports for the Office of U.S. Naval Research on the state of science in post-WWII France, Italy, and the former Czechoslovakia. These typewritten drafts span the years 1947-1948 and discuss the difficulties facing European mathematicians and scholars and the possibility of U.S. aid under the European Recovery Plan. Lewy's other writings consist mainly of reprints relating to his mathematical research and span from 1928 to 1987.

While on his honeymoon trip in 1947, Lewy visited China and taught a course on water waves in Chengtu, Szechuan. A small amount of teaching materials from this course as well as some materials from his mathematics courses taught at Berkeley are included in the collection.

Lewy's personal papers include materials regarding the immigration of Lewy's mother and sister as well as condolence letters to his wife and son after his death in 1988. Also included are materials pertaining to Lewy's awards and honors, such as the Steele and the Wolf Prizes, biographical materials documenting his career in mathematical research, and photographs spanning from his childhood years in Germany to his later years at UC Berkeley.

Materials pertaining to the loyalty oath are very limited and include only Lewy's statement to the UC Senate Committee on Privilege and Tenure and his correspondence with the U.S. Department of Commerce.

Carton 1, folders
1-16

Series 1. **Correspondence, 1923-1990, n.d.**

Series Scope and Content Summary

Divided into two sub-series: Incoming and Outgoing. Correspondence consists mainly of letters between Lewy and his professional colleagues. Included are letters from Richard Courant, Jean Leray, and other leading mathematicians.

Arrangement

Arranged alphabetically, then chronologically.

Subseries 1.1. **Incoming, 1923-1990**

carton 1, folder 1
carton 1, folder 2
carton 1, folder 3
carton 1,
folder 4-6
carton 1, folder 7
carton 1, folder 8
carton 1, folder 9
carton 1, folder 10
carton 1, folder 11
carton 1, folder 12
carton 1,
folder 13-14

A-C miscellaneous 1932-1989

Courant, Richard, 1888-1972 1923-1928

D-L miscellaneous 1933-1990

Leray, Jean, 1906- 1941-1986

M-P miscellaneous 1951-1988

R-S miscellaneous 1936-1988

T-U miscellaneous 1935-1988

V-Z miscellaneous 1932-ca.1980

Wei, Si Luan 1981-1987

Zhiyuan, Tang 1982-1984

Unidentified 1927-1988

Subseries 1.2. **Outgoing, 1946-1985, n.d.**

carton 1,
folder 15-16
Carton 1, folders
17-84

Miscellaneous 1946-1985, n.d.

Series 2. **Writings, 1928-1987, n.d.**

Series Scope and Content Summary

Divided into three subseries: Reports and Reviews, Research Papers, and Notes.

Arrangement

Arranged hierarchically, then chronologically.

Subseries 2.1. **Reports and Reviews, 1947-1948**

Subseries Scope and Content Summary

Reports and Reviews include Lewy's reports for the U.S. Office of Naval Research concerning the condition of science in Europe, specifically Czechoslovakia, France, and Italy in 1947. Employment records and correspondence in connection with Lewy's services to the U.S. Office of Naval Research are also included.

carton 1,
folder 17-18

Correspondence, U.S. Office of Naval Research 1947-1948

carton 1, folder 19	Notes on the state and support of science in Czechoslovakia 1947
carton 1, folder 20	Notes on a visit to Professor Jan Smetana and the T. G. Masaryk Hydrological and Hydrotechnical Institutes in Prague Podbaba 1947
carton 1, folder 21	Notes on mathematics in present day Czechoslovakia 1947
carton 1, folder 22	A visit to the Neypric laboratories in Grenoble, France 1948
carton 1, folder 23	Needs of Italian and French science and possible American aid under ERP 1948
carton 1, folder 24	Organization of Italian scientific life 1948
carton 1, folder 25	Notes on general condition of French science, Winter 1947/48 ca. 1948
carton 1, folder 26	Miscellaneous notes about French mathematics ca. 1948
carton 1, folder 27	Reviews 1952-1986, n.d.

Subseries 2.2. **Research Papers, 1928-1987, n.d.****Subseries Scope and Content Summary**

The Research Papers consist mostly of reprints of papers published by Hans Lewy or Hans Lewy and others. There are very few original drafts of manuscripts. This subseries also contains Lewy's reviews of colleagues' work as requested by the National Research Council.

carton 1, folder 28	Verallgemeinerung der Riemannschen Methode auf mehr Dimensionen, <i>Göttingen Nachr. der Akad.</i> 1928
carton 1, folder 29	On convergence in length, <i>Duke Mathematical Journal</i>, with C.R. Adams. 1935
carton 1, folder 30	Generalized integrals and differential equations, <i>Proceedings of the National Academy of Sciences.</i> 1936
carton 1, folder 31	On the non-vanishing of the Jacobian in certain one-to-one mappings, <i>Bulletin of the American Mathematical Society.</i> 1936
carton 1, folder 32	A priori limitations for solutions of Monge-Ampère equations, II, <i>Transactions of the American Mathematical Society.</i> 1937
carton 1, folder 33	On the existence of a closed convex surface realizing a given Riemannian metric, <i>Proceedings of the National Academy of Sciences.</i> 1938
carton 1, folder 34	On differential geometry in the large, I (Minkowski's problem), <i>Transactions of the American Mathematical Society.</i> 1938
carton 1, folder 35	Generalized integrals and differential equations, <i>Transactions of the American Mathematical Society.</i> 1938
carton 1, folder 36	A property of spherical harmonics, <i>American Journal of Mathematics.</i> 1938
carton 1, folder 37	Water waves on sloping beaches, <i>Bulletin of the American Mathematical Society.</i> 1946
carton 1, folder 38	The dock problem, with K.O. Friedrichs. 1948
carton 1, folder 39	On the convergence of solutions of difference equations, <i>Courant: Anniversary Volume.</i> 1948
carton 1, folder 40	Developments at the confluence of analytic boundary conditions. 1950
carton 1, folder 41	On steady free surface flow in a gravity field. 1951
carton 1, folder 42	Axially symmetric cavitation flow, <i>Annals of Mathematics</i>, with P.R. Garabedian and M. Schiffer. 1952
carton 1, folder 43	A note on harmonic functions and a hydrodynamical application, <i>Proceedings of the American Mathematical Society.</i> 1952
carton 1, folder 44	Introduction to the Collected Works of Bernard Riemann. 1953
carton 1, folder 45	The development of functions associated with surface waves over an inclined bottom, <i>Stanford University Technical Report.</i> 1954
carton 1, folder 46	Extension of Huyghens' principle to the ultrahyperbolic equation, <i>Annali di Matematica Pura ed Applicata.</i> 1955
carton 1, folder 47	On the relations governing the boundary values of analytic functions of two complex variables. 1955
carton 1, folder 48	On the local character of the solutions of an atypical linear differential equation in three variables and a related theorem for regular functions of two complex variables, <i>Annals of Mathematics.</i> 1956
carton 1, folder 49	An example of a smooth linear partial differential equation without solution erratum, <i>Annals of Mathematics.</i> 1958

carton 1, folder 50	Composition of solutions of linear partial differential equations in two independent variables, <i>Journal of Mathematics and Mechanics</i>. 1959
carton 1, folder 51	On the reflection laws of second order differential equations in two independent variables, <i>Bulletin of the American Mathematical Society</i>. 1959
carton 1, folder 52	Atypical partial differential equations, <i>Partial Differential Equations and Continuum Mechanics</i>. 1961
carton 1, folder 53	On the non-vanishing of the jacobian of a homeomorphism by harmonic gradients, <i>Annals of Mathematics</i>. 1968
carton 1, folder 54	About the Hessian of a spherical harmonic, <i>American Journal of Mathematics</i>. 1969
carton 1, folder 55	On the regularity of the solution of a variational inequality, <i>Communications on Pure and Applied Mathematics</i>, with Guido Stampacchia. 1969
carton 1, folder 56	On the partial regularity of certain superharmonics, <i>Studies and essays presented to Yu-Why Chen on his Sixtieth Birthday</i>. 1970
carton 1, folder 57	On a refinement of Evans' law in potential theory, <i>Accademia Nazionale dei Lincei Rendiconti della Classe di Scienze fisiche, Matematiche e Naturali</i>. 1970
carton 1, folder 58	Generalization of the spatial angle, <i>Uspehi Matematicheskikh Nauk</i>. 1971
carton 1, folder 59	On the coincidence set in variational inequalities, <i>Journal of Differential Geometry</i>. 1972
carton 1, folder 60	On analyticity in homogeneous first order partial differential equations, <i>Annali della Scuola Normale Superiore di Pisa</i>. 1976
carton 1, folder 61	On the minimum number of domains in which the nodal lines of spherical harmonics divide the sphere, <i>Communications in Partial Differential Equations</i>. 1977
carton 1, folder 62	On the boundary behavior of holomorphic mappings, <i>Contributi del Centro Linceo Interdisciplinare di Scienze Matematiche e Loro Applicazioni</i>. 1977
carton 1, folder 63	On the relation between analyticity in one and in several variables. 1978
carton 1, folder 64	Expansion of solutions of t' Hooft's equation. A study in the confluence of analytic boundary conditions, <i>Manuscripta mathematica</i>. 1979
carton 1, folder 65	An inversion of the obstacle problem and its explicit solution, <i>Annali della Scuola Normale Superiore di Pisa</i>. 1979
carton 1, folder 66	On conjugate solutions of certain partial differential equations, <i>Communications on Pure and Applied Mathematics</i>. 1980
carton 1, folder 67	Über die Darstellung ebener Kurven mit Doppelpunkten. 1981
carton 1, folder 68	On the analyticity of minimal surfaces at moveable boundaries of prescribed length. ca. 1950-1986
carton 1, folder 69	On free boundary problems in two dimensions. ca. 1982-1985
carton 1, folder 70	On the analyticity of minimal surfaces at moveable boundaries of prescribed length. 1985-1987
carton 1, folder 71	Über die Partiellen Differenzgleichungen der Mathematischen Physik. n.d.
carton 1, folder 72	On a minimum problem for superharmonic functions. n.d.
carton 1, folder 73	Miscellaneous n.d.

Subseries 2.3. Notes

Subseries Scope and Content Summary

Notes consist of math notes by Lewy. Untitled notes that have been labeled by mathematicians David Kinderlehrer and Michael Lewy, Lewy's son, appear in brackets.

carton 1, folder 74	[Carthéodory notes] n.d.
carton 1, folder 75-76	[Notes on potential theory] n.d.
carton 1, folder 77	[Potential theory lecture notes] n.d.
carton 1, folder 78	[Notes on geometry] n.d.
carton 1, folder 79-84	Unidentified mathematical notes n.d.

Carton 2, folders 1-5	<p>Series 3. Writings by Others, 1976-1979, n.d.</p> <p>Series Scope and Content Summary</p> <p>Consists of writings by others that are either dedicated to Lewy or about his work.</p> <p>Arrangement</p> <p>Arranged chronologically.</p>
carton 2, folder 1	<p>Lewy problem for Cauchy-Riemann equations, <i>Contributi del Centro Linceo Inter-disciplinare di Scienze Matematiche e Loro Applicazioni</i>, by Aldo Andreotti. 1976</p>
carton 2, folder 2	<p>On Lewy's Equation, by G.M. Khenkinan. 1977</p>
carton 2, folder 3	<p>On the Korteweg-De Vries equation. <i>Manuscripta mathematica</i>, by Tosio Kato. 1979</p>
carton 2, folder 4	<p>Some mathematical problems suggested by questions in physics, by Mark Kac 1979</p>
carton 2, folder 5	<p>Families of analytic discs in C^n with boundaries on a prescribed CR submanifold, by Hill, C. Denson and Geraldine Taiani. n.d.</p>
Carton 2, folders 6-13	<p>Series 4. Teaching Materials, 1948-1971, n.d.</p> <p>Series Scope and Content Summary</p> <p>Includes teaching materials from the course taught by Lewy in China in 1947, as well as some materials from his mathematics courses at Berkeley.</p> <p>Arrangement</p> <p>Arranged chronologically.</p>
carton 2, folder 6	<p>Aspects of the theory of surface waves. 1948</p>
carton 2, folder 7	<p>Some applications of abstract spaces on questions of analysis. 1948</p>
carton 2, folder 8	<p>Mathematics 205A, [Function theory]. 1965</p>
carton 2, folder 9	<p>Mathematics 206A, [Functional analysis]. 1971</p>
carton 2, folder 10	<p>Mathematics 206B, [Functional analysis]. 1971</p>
carton 2, folder 11	<p>Mathematics 217, [Special functions]. n.d.</p>
carton 2, folder 12	<p>Mathematics 222A, [PDE]. n.d.</p>
carton 2, folder 13	<p>Mathematics 222B, [PDE]. n.d.</p>
Carton 2, folders 14-21; oversize folder 1A	<p>Series 5. Professional Activities, 1935-1988</p> <p>Series Scope and Content Summary</p> <p>Consists of materials pertaining to UC committees, conferences, grants and fellowships received by Lewy, visiting professorships, and lecture announcements.</p> <p>Arrangement</p> <p>Arranged chronologically.</p>
carton 2, folder 14	<p>Grants and fellowships 1935, 1960</p>
carton 2, folder 15	<p>Lecture announcements 1947-1953</p>
carton 2, folder 16	<p>Visiting professorships 1947-1974</p>
carton 2, folder 17-18	<p>Conferences 1950-1987</p>
Oversize folder 1A	<p>Conference announcements 1963, 1986</p>
carton 2, folder 19-21	<p>Committees 1982-1988</p>
Carton 2, folders 22-67; oversize folder 1A	<p>Series 6. Personal Papers, 1906-1999</p> <p>Series Scope and Content Summary</p> <p>Divided into five subseries: Family Papers, Awards and Honors, Biographical Materials, Loyalty Oath, Photographs.</p> <p>Arrangement</p> <p>Arranged hierarchically, then chronologically.</p>

Subseries 6.1. **Family Papers, 1921-1988**

Subseries Scope and Content Summary

The Family Papers consist of family immigration documents.

carton 2, folder 22
carton 2, folder 23
carton 2,
folder 24-25
carton 2, folder 26

Immigration correspondence 1921-1941

Immigration papers 1938-1941

Helen Lewy correspondence 1988

Letters of condolence to Helen and Michael Lewy 1988

Subseries 6.2. **Awards and Honors, 1964-1989**

Subseries Scope and Content Summary

Awards and Honors include materials related to the Steele Prize and the Wolf Prize.

carton 2, folder 27
carton 2, folder 28
carton 2, folder 29
carton 2,
folder 30-31
carton 2, folder 32
carton 2, folder 33
carton 2, folder 34

National Academy of Sciences 1964

New York Academy of Sciences 1974

The Leroy P. Steele Prize 1979

Wolf Prize 1984-1986

American Academy of Arts and Sciences 1985

Premio Balzan 1985

Exodus Professorum (Universität Göttingen) 1989

Subseries 6.3. **Biographical Materials, 1922-1999, n.d.**

Subseries Scope and Content Summary

The Biographical Materials include the biographical compilation titled *Selecta Hans Lewy*, composed by colleagues Stephen Hildebrandt and David Kinderlehrer. Also in this subseries are education and employment records.

carton 2,
folder 35-36
carton 2, folder 37

carton 2, folder 38
Oversize folder 1A
carton 2, folder 39
Oversize folder 1A
carton 2, folder 40

Biographies ca. 1940-1999

Interview with William B. Wolf n.d.

Educational records

Johannes-Gymnasium zu Breslau 1922

Johannes-Gymnasium zu Breslau diploma 1922

Universität Göttingen 1922-1931, 1976

Doctoral diploma 1926

Universität Bonn 1986-1987

Employment records

University of Göttingen 1933

University of California, Berkeley 1935-1969

Miscellaneous employment records and certificates 1933-1952

carton 2, folder 41
carton 2, folder 42
carton 2,
folder 43-44
carton 2, folder 45
carton 2, folder 46
carton 2,
folder 47-48
carton 2,
folder 49-50
Oversize folder 1A

United States War Department. Aberdeen Proving Ground 1944-1947

General Electric Company 1958-1959

Hans Lewy Memorial 1988

Miscellaneous biographical materials n.d.

Certificates 1964-1986

Subseries 6.4. **Loyalty Oath, 1950-1951**

Series Scope and Content Summary

The subseries Loyalty Oath consists of correspondence and Lewy's statements regarding the loyalty oath of the UC regents as well as the Department of Commerce.

carton 2, folder 51
carton 2, folder 52

Statement to the Members of the Senate Committee on Privilege and Tenure 1950
Correspondence with United States Department of Commerce, Loyalty Board 1951

Subseries 6.5. **Photographs, 1906-1988**

Series Scope and Content Summary

The photographs include family, the University of Göttingen, travel, and colleagues.

carton 2, folder 53
carton 2, folder 54
carton 2, folder 55
carton 2, folder 56
carton 2, folder 57
carton 2, folder 58
carton 2, folder 59
carton 2, folder 60
carton 2, folder 61
carton 2, folder 62
carton 2, folder 63
carton 2, folder 64
carton 2, folder 65
carton 2, folder 66
carton 2, folder 67

Lewy family ca. 1906-1916
Göttingen ca. 1930
France and Italy ca. 1930
Brown University ca. 1933
Lewy with family in Germany ca. 1934
California ca. 1935-1947
UC Berkeley ca. 1935-1962
Lewy and family ca. 1956-1985
Richard Courant 1961
Lewy and Erhard Heinz 1965
Lewy and others ca. 1977-1988
China 1982
Conference in Trento, Italy 1986
Hans Lewy memorial 1988
Unidentified ca. 1935-1938