

SCIENCE HISTORY INSTITUTE

HENRI TERMEER

Life Sciences Foundation Collection

Transcript of an Interview
Conducted by

Ted Everson and Arnold Thackray

Cambridge, Massachusetts

on

23 May 2006, 7 December 2006, 2 August 2007, 18 December 2008, and 30 September 2011

(With Subsequent Corrections and Additions)



Henri Termeer

THE LIFE SCIENCES FOUNDATION
Oral History Program
Release

I understand and agree that:

1. My oral history materials (recordings, transcripts, photographs, documents, and memorabilia) will be maintained by the Life Sciences Foundation.
2. I hereby assign to the Life Sciences Foundation all rights to my oral history materials, including the literary rights and the copyright.
3. The Life Sciences Foundation may publish or publicly display my oral history materials subject to the conditions listed below.

I wish to place the following conditions upon the use of my oral history materials:

- a. **Open, unrestricted access.**
- b. **Semi-restricted access.** My oral history materials may be displayed publicly. My permission is required to quote, cite, or reproduce them.
- c. **Restricted access.** My permission is required to view, quote, cite, or reproduce my oral history materials.

(Signature)

INTERVIEWEE'S NAME

HENRI A. SERMERN

(Date)

1/28/13

This oral history is designated **Free Access**.

Please note: This oral history is protected by U.S. copyright law and shall not be reproduced or disseminated in any way without the express permission of the Science History Institute. Users citing this interview for purposes of publication are obliged under the terms of the Center for Oral History, Science History Institute, to credit the Science History Institute using the format below:

Henri Termeer, interview by Ted Everson and Arnold Thackray, Cambridge, Massachusetts, 23 May 2006, 7 December 2006, 2 August 2007, 18 December 2008, and 30 September 2011 (Philadelphia: Science History Institute, Oral History Transcript # 0342).

Science
History
Institute



Chemistry · Engineering · Life Sciences

Formed by the merger of the Chemical Heritage Foundation and the Life Sciences Foundation, the Science History Institute collects and shares the stories of innovators and of discoveries that shape our lives. We preserve and interpret the history of chemistry, chemical engineering, and the life sciences. Headquartered in Philadelphia, with offices in California and Europe, the Institute houses an archive and a library for historians and researchers, a fellowship program for visiting scholars from around the globe, a community of researchers who examine historical and contemporary issues, and an acclaimed museum that is free and open to the public. For more information visit sciencehistory.org.

HENRI TERMEER

1946 Born in Tilburg, Netherlands, on 28 February

Education

1973 MBA, Darden School, University of Virginia

Professional Experience

Norvic
1969-71 Manager, Management Services

Travenol Laboratories
1973-75 Manager, International Product Planning

Baxter International
1975-76 International Marketing Manager
1976-79 General Manager, Travenol GMBH
1979-81 Executive Vice President, Hyland Therapeutics Division
1981-82 International Marketing Manager, Artificial Organs Division

Genzyme Corporation
1983-84 President and Director
1985-87 Chief Executive Officer
1988 Chairman

Honors

1990-1992 Wall Street Transcript Gold Award
1991, 1994 Laguna Niguel Best of Biotech Award (for Genzyme)
1992 Merrill Lynch and Ernst & Young, Inc., "Entrepreneur of the Year"
1995 Success Magazine, "Renegade of the Year"
1995 Anti-Defamation League's New England Region's Torch of Liberty
Award for leadership in human rights and for promoting understanding
among people of diverse religious, ethnic, and racial backgrounds
1997 Cardinal Cushing School for Exceptional Children, "Humanitarian of the
Year"
1997 Hall of Fame Award (for Genzyme). Special Recognition for an
Individual Award, Biotech Meeting at Laguna Niguel, Tenth
Anniversary Celebration

- 1997 Governor's New American Appreciation Award for his success as a foreign-born entrepreneur in America
- 1999 Fellow in the American Academy of Arts and Sciences
- 1999 Genetic Disease Foundation Humanitarian Award
- 1999 Honoree of the Biomedical Science Careers Project's Evening of Hope.
- 1999 Golden Door Award, International Institute of Boston
- 2001 Boston History Collaborative's 2001 "History Makers' Award in Biotechnology (accepted on behalf of Genzyme)
- 2003 Cor Vitae Award from the American Heart Association
- 2003 Franklin Delano Roosevelt Humanitarian Award, March of Dimes
- 2005 United States National Medal of Technology and Innovation (accepted on behalf of Genzyme)
- 2005 Honorary Fellowship at the British Royal College of Physicians
- 2007 Ernst & Young's "Master Entrepreneur" Award
- 2008 Chemical Heritage Foundation (CHF) and Biotechnology Industry Organization (BIO) Biotechnology Heritage Award
- 2012 RARE Lifetime Achievement Award.

ABSTRACT

Henri Termeer begins his interview by discussing his parents' histories, the influence of family, and his entrance into the business world. He describes how, as a boy, he began to develop leadership skills as early as his Boy Scout years and built upon them in military service after high school. He also showed a strong interest in the business process and describes how he studied economics in university. While writing his master's thesis, he acquired his first job in systems engineering. He recounts how he developed, implemented, and then managed the computerization of Norvic, a now defunct European shoe company. From shoes, Termeer describes his move into the medical and healthcare product business, holding various management positions at Baxter Travenol Laboratories Inc. (now Baxter International) in the United States and Europe, including executive vice president of Baxter's Hyland Therapeutic Division and General Manager of Travenol GmbH in Germany. Through his work for Baxter, Termeer gained the experience necessary to head Genzyme in 1983, a then two-year-old start-up biotechnology company, located in Cambridge, Massachusetts. Under his leadership, Genzyme pioneered treatments for patients with rare genetic diseases. Termeer recounts Genzyme's experience with Gaucher disease and the developments of Ceredase and then Cerezyme, and how Genzyme developed and distributed other innovative treatments to patients. Under his leadership, Genzyme became a global biotech business, diversifying through acquisitions across areas including LSDs (lysosomal storage disorders), orthopedics, cancer, transplant and immune diseases, and diagnostic testing. Termeer found time to be involved in many bio-related organizations, including BIO and PhrMA, and to be involved in policy issues regarding drug development and healthcare as well as in a number of local community organizations in Boston. He concludes his interview with comments on Boston biotech, the future of biotech more generally, and personalized genomic medicine.

INTERVIEWER

Ted Everson the director of clinical communications at Vital Issues in Medicine (VIM), a medical education company, earned a PhD in history and philosophy of science and technology from the University of Toronto and an MS in medical genetics from the University of British Columbia. During his tenure at CHF he founded the biotechnology program, which included focused scholarship on industry development. He is the author of *The Gene: A Historical Perspective* (2007), "Genetic Engineering Methods" in *The Encyclopedia of Twentieth Century Technology* (2004), and "Genetics and Molecular Biology" in *History of the Exact Sciences and Mathematics* (2002).

Arnold Thackray founded the Chemical Heritage Foundation and served the organization as president for 25 years. He is currently CHF's chancellor. Thackray received MA and PhD degrees in history of science from Cambridge University. He has held appointments at Cambridge, Oxford University, and Harvard University, the Institute for Advanced Study, the Center for Advanced Study in the Behavioral Sciences, and the Hebrew University of Jerusalem. In 1983 Thackray received the Dexter Award from the American Chemical Society for outstanding contributions to the history of chemistry. He served for more than a quarter

century on the faculty of the University of Pennsylvania, where he was the founding chairman of the Department of History and Sociology of Science and is currently the Joseph Priestley Professor Emeritus.

ABOUT THIS TRANSCRIPT

This interview was part of the Life Sciences Foundation's collection of oral history and research interviews with individuals who played significant roles in the birth and growth of the biotechnology industry. In December 2017, the Chemical Heritage Foundation and the Life Sciences Foundation merged to become the Science History Institute.

The Center for Oral History, Science History Institute, is committed both to preserving the recording of each oral history interview in our collection and to enhancing research use of the interviews by preparing carefully edited transcripts of those recordings. The preparation of interview transcripts begins with the creation of a verbatim typescript of the recording and proceeds through review and editing by staff of the Center; interviewees also review the typescript and can request additions, deletions, or that sections be sealed for specified periods of time. We have established guidelines to help us maintain fidelity to the language and meaning of each recorded interview while making minor editorial adjustments for clarity and readability. Wherever possible, we supply the full names of people, organizations, or geographical locations mentioned during the interview. We add footnotes to the transcript to provide full citations for any publications that are discussed, to point to extant oral history interviews, and to clear up misstatements or provide context for ambiguous references in the transcript. We use brackets to indicate the addition of material that was not in the audio, and bracketed ellipses to indicate the deletion of recorded material. The transcript also includes time stamps at five-minute intervals. We omit without noting most instances of verbal crutches and all instances of nonlexical utterances. We also make small grammatical corrections where necessary to communicate interview participants' meaning. Finally, staff of the Center create the abstract, chronology, table of contents and index.

This interview was transcribed, edited and published by the Life Sciences Foundation. With its accession into the collection of the Science History Institute, the transcript has been reformatted to include our front matter and index, but the text of the transcript itself has not been re-edited. Thus, it does not include our standard timestamps and editorial indications, and it may diverge significantly from the audio recording of the interview. Original audio files of the interview are in the collection.

TABLE OF CONTENTS

Chronology	i
Abstract	iii
Interviewer Bio	iii
About this Transcript	iv
23 May 2006	1
Early Life	1
Growing up in Tilburg, Netherlands. Parents’ backgrounds. Early family life. Catholic upbringing. Education. Military service. Learning leadership. Playing chess.	
University and Early Business Experience	5
Studying economics. Moving to the UK. Managing the computerization of a shoe business in the early years of computers. Being recruited by American MBA programs. Arriving at the University of Virginia. Early married life on campus.	
Career at Baxter International	10
Chicago and California years. Learning about healthcare and medical products. Managing Baxter, Germany. Glimpses into the business of rare diseases. Running Baxter Hyland’s R&D in California. Leaving Baxter and entering biotech.	
7 December 2006	18
Genzyme: The Beginnings	18
The origins of Genzyme. Early Gaucher therapy trials. The first patient, Brian Berman. Ignoring the scientific advice. Gaining production and regulatory experience. Importance of manufacturing. IPO in 1986.	
Research and Development Partnerships	24
Funding Gaucher research. Ceradase trials. Impact of HIV crisis. Processing placentas. Building a manufacturing plant at Allston. Global patient relations. Fabrazyme. Merging IBA and ABC to form BIO. The regulatory environment and FDAMA.	
2 August 2007	36
Genzyme: Growing a Global Business	36
Septrafilm. Diversification. Renagel. Cholestagel. Vertical integration. Failure of tolevamer. Thymoglobulin. Campath. Myozyme and Pompe research. Fabrazyme. Genetic testing and diagnostics.	
18 December 2008	44
Reflections	44
Fabrazyme. Genetic testing. The future of medicine. Doing business globally. Reflecting on Genzyme’s success. Acquisitions. Boston biotech.	

30 September 2011	57
Epilogue: After Genzyme	57
Impact of the financial crisis. Shutdown of Allston plant. Relations with the company's stakeholders. The possibility of takeover. Discussions with Sanofi. Lessons learned. Personal life and current interests.	
Index	64

INDEX

A

albumin, 10, 15–16, 26–27
Alcon, 36–37
Amgen, 16, 22, 32
anti-adhesion products, 28, 36–37
artificial organs, 10, 12–13. *see also* organ transplantation
Association of Biotechnology Companies (ABC), 32–33

B

Balazs, Endre, 23, 36
Baxter International, 9–18, 27, 48. *see also* Hyland Therapeutics
Berman, Brian, 19, 24
Berman, Robin, 19–20, 24
Bio Information Associates (BIA), 54–55
Biogen, 15–16, 38, 48, 50, 52–53
Biomatrix, 23, 36–37, 39, 41
Biotech Meeting at Laguna Niguel, 33–34
biotechnology
 Baxter boys' role in, 10
 in Boston area, 29, 54–55
 early biotech industry, 20–24
 Genzyme's impact on the field, 59
 global future, 55–56
 Hyland Therapeutics, 15–16
 oncology markets, 41
 profitability, 51
 public policy, 32
 Termeer's move into, 18
Biotechnology Industry Organization (BIO), 32–35
Blair, Henry, 18–19, 38
blood. *see* plasma; red cells
Boston, 15, 27, 29–30, 50, 53–56
Brady, Roscoe, 19–20, 31
Brazil, 11–12, 31, 48
Breda, 1, 3
Brussels, 1, 11–12
Burrill, G. Steven, 33, 47

C

California, 11, 14–15, 23, 33, 40
Cambridge, Massachusetts, 26, 53–54
Cambridge, United Kingdom, 6, 21
Cambridge Computer Services (CCS), 5–6
Campath, 41, 54
Canada, 1–2, 5, 31, 50
cancer, 39, 45, 47, 62. *see also* oncology
Carpenter, Bob, 27, 38

Centers for Disease Control (CDC), 11, 45
Centocor, 24, 32
Ceredase, 19, 28, 30, 49, 54
Cerezyme, 30, 32, 37, 44, 49, 51, 60
Chagas disease, 11
Chicago, 10, 12, 14
China, 26, 47–50, 55–56
Chinese hamster ovary (CHO) cells, 27, 42, 51
clinical chemistry, 19, 22
clinical trials, 20, 25–26, 37–38, 40–41, 43–44, 48, 53–54, 56
Clinton, Hillary, 32–33
Clinton, William Jefferson, 30, 47
Cohen, Joseph M., 24
computers, 3, 5–6. *see also* information technology consulting, 6, 9, 16, 18
Cooney, Charles, 20, 22, 29
Cornell University, 7, 23
Costa Mesa, 10–12
Cowen & Company, 24

D

diagnostics, 10–11, 13, 18–23, 45–46, 54–55, 59
dialysis, 12–13, 16, 38
diversification, 37, 50, 52, 54, 57
drug pricing, 14, 22, 30–33, 38, 40, 42, 51
Duke University, 42–43
Duzan, Steve, 32–33

E

economics, 1, 3–6, 8
energy industry, 55. *see also* oil industry
entrepreneurship, 15, 18–19, 23, 36, 55
enzymes, 19–23, 26, 31–32, 37, 42–44, 58
erythropoietin (EPO), 16, 27
ethics, 11, 14, 48
Europe
 biotechnology industry, 51, 56
 cholesterol-lowering program, 39
 employment in, 9–10
 family in, 63
 Genzyme infrastructure, 53
 vs. India, 48
 markets, 21, 31
 placenta collection, 26–27
 regulations and compliance, 12, 26, 43
 vs. United States, 15
European Medicines Evaluation Agency (EMA), 50, 58
Evans-Freke, Stephen, 24, 28

F

Fabrazyme, 31, 44
Fabry disease, 32, 43
Factor IX, 10, 13, 16
Factor VIII, 10, 13–16, 27
FDA Modernization Act (FDAMA), 34–35
Feldbaum, Carl, 32
Food and Drug Administration (FDA), 21, 27, 33–38, 41, 43, 51, 58
fossil fuels, 55. *see also* energy industry; oil industry
Framingham, 28, 53, 60
France, 2, 25–27, 37, 40, 43, 50
Frank, Fred, 34

G

Gaucher disease
 Cerezyme price, 32
 enzyme replacement therapy, 20, 37, 43–44
 Genzyme's focus on, 49
 glucocerebrosidase, 19–20, 22
 international treatment, 31
 limited R&D partnerships, 24–25, 28
 viral contamination incident, 58
GelTex, 38–39
gene therapy, 20, 48, 56
Genentech, 15–16, 22–24, 29, 32, 48, 50, 52–53
generics, 21, 43, 51
genetic counseling, 45
Genetics Institute (GI), 15–16, 23, 32, 53
Genex, 15, 22
Genzyme
 acquisitions, 19, 21, 27–28, 39–41, 53–54, 59
 Allston plant, 28–30, 40, 43, 57–59
 Beijing research center, 47
 Belgian plant, 57
 competitors, 50–51, 55–56
 employees, 18, 23–24, 28, 31, 36, 38–39, 54–55, 58
 financial crisis, 57
 formation, 18–19
 Framingham facility, 53, 60
 funding, 20–21
 global market, 21–22, 31, 45, 47–49, 56
 global pricing, 31, 40
 HIV plasma crisis, 25–27, 49
 initial public offering (IPO), 23–24
 joining, 15
 limited R&D partnerships, 24–25, 28, 36
 Lyon plant, 26–27, 40
 management team, 52–53
 merger with Integrated Genetics, 27–28
 mission changes, 48–49
 Mount Sinai licenses, 31–32
 products launched in the 1990s, 36–41

 reagent business, 21
 recombinant technologies, 27–28
 revenues, 10, 38, 45
 sales, 23, 43, 53
 secondary public offering, 28
 shareholders, 18–20, 28, 37–38, 54, 57–59
 stock price, 28, 49, 53
 takeover by Sanofi, 59–60
 viral contamination incident, 57–59
 Waltham facility, 39
Germany, 12–14, 25
glucocerebrosidase, 19, 24, 31, 40
glycosylation, 19, 23, 26–27
Graham, William B., 10, 16, 18

H

Harvard Business School, 13, 28, 30
Harvard University, 7, 10, 18, 20, 30, 38, 54
Hawaii, 26, 49
healthcare industry, 10–11, 13–14, 16, 19, 31, 55, 60
healthcare reform, 32–33, 47, 62–63
hemophilia, 14, 25, 27, 31
hepatitis, 15, 25
Holland, 1–3, 5–6, 8, 42, 50, 55, 63
human immunodeficiency virus (HIV), 15, 25–27, 30, 32–33, 49
hyaluronic acid, 23, 28, 36–37, 41
Hybritech, 15–16
Hyland Therapeutics, 10–16, 18. *see also* Baxter International

I

Icahn, Carl, 57, 59–60
ILEX Oncology, 39, 41
immunoglobulins, 10, 16, 26
India, 47–48, 55–56
Industrial Biotechnology Association (IBA), 32–33
information technology, 45, 53. *see also* computers
initial public offerings (IPO), 23–24
innovation, 37, 51–52, 56, 60
insulin, 15, 58
Integrated Genetics, 27–28, 45, 53
intellectual property, 33, 62
International Business Machines Corp. (IBM), 5, 7
International Computers, Ltd. (ICL), 5, 7
Israel, 31, 43

J

Japan, 25–27, 31, 37, 43, 49, 55

K

Kennedy, Edward, 34–35
Kessler, David A., 34–35

L

Latin America, 11, 31
leadership skills, 3–4
leukemia, 41
limited R&D partnerships, 24–25, 28, 36
Lodish, Harvey, 20
Los Angeles, 14, 18
Loucks, Vernon R., 16, 18
low-density lipoprotein (LDL), 38
Lyon, 26, 40, 43
lysosomal storage disorders, 42, 44–45

M

manufacturing
Allston plant, 28–30
biotechnology, 21–22
generics, 51
hyaluronic acid, 36
Hyland Therapeutics, 15
importance for Genzyme, 37–40, 43, 52–53, 61
shoes, 2, 5–6
using CHO cells, 42–43
using recombinant technologies, 49
viral contamination crisis, 57–59
marketing, 10–14, 21–22, 24–25, 28, 31, 36–41, 50–56
Massachusetts Institute of Technology (MIT)
Genzyme employees from, 23
Genzyme shareholders from, 20–21, 36–37, 48
impact on Boston area biotech, 54–55
relationship with Genzyme, 18
relationship with Integrated Genetics, 27
Mondale, Walter, 26, 49
Montgomery Securities' Bridge Fund, 18–19
Mount Sinai Medical Center, 31–32
multiple sclerosis, 41, 52, 54
Munich, 12–13, 15
Myozyme, 31, 36, 41–42, 44

N

National Institutes of Health (NIH), 19–21, 23–24, 31–33, 54
Netherlands, 1–3, 5–6, 8, 42, 50, 55, 63
New England Healthcare Institute (NEHI), 62–63
newborn screening, 45–46
nonsocomial infections, 21, 40
Norvic, 5–8
Norwich, 7, 62
Novazyme, 42–43

O

Oak Ventures, 18–19
Obama, Barack H., 51

oil industry, 23–24, 50. *see also* energy industry;
fossil fuels
oil shortage, 11–12
oncology, 39, 41, 45, 52, 60. *see also* cancer
ophthalmic surgery, 36–37
organ transplantation, 40–41. *see also* artificial
organs
Osiris Therapeutics, 53–54
osteoarthritis, 37, 41

P

Parkinson's disease, 56
patents, 27–28, 32–35, 51
perfusion technology, 29, 30–34, 37, 44, 46, 49–50
personalized medicine, 44–45, 49–50
Pfizer, 51–52
pharmaceutical industry, 21, 32–33, 50–51, 59, 62
Pharmaceutical Research and Manufacturers of
America (PhRMA), 35, 62
placentas, 19–20, 25–28, 31–32
plasma, 10–11, 15, 22–23, 25–27, 29
plasmapheresis, 10, 26
polymers, 36, 38
Pompe disease, 31, 42–45
prenatal genetic testing, 45–46
Prescription Drug User Fee Act (PDUFA), 34
prices. *see* drug pricing
proteins, 10, 15–16, 22–23, 27, 38, 43, 53
Provisc, 36–37
PTC Therapeutics, 53

R

Raab, Kirk, 32
Raines, Lisa, 34–35
recombinant technologies, 15–16, 20, 22, 26–29, 32, 49
red cells, 10, 16
regulations and compliance, 12–14, 21–22, 25–26, 33, 51, 57–60
Renagel, 36, 38–39
research and development, 15, 18, 22, 37, 39, 41, 51.
see also limited R&D partnerships
Rha, Cho Kyun, 20, 23, 36
Rotterdam, 5, 42
Russia, 31, 48, 50

S

safety, 43, 48, 53
Sanofi, 59–60
Second World War, 11, 14
Septrafilm, 36–37
Shire Pharmaceuticals, 50–51, 59
shoes, 2, 5–6, 48

siblings, 2, 5, 63
Sinskey, Anthony J., 20, 29
Skaletsky, Mark, 38
Snyder, Sheridan, 18–19
South Africa, 5, 11–12, 25
statins, 38–39, 47
Synpac, 42–43
Synvisc, 37, 41

T

Taiwan, 42, 45–46
Termeer, Henri
 board memberships, 32, 38, 54, 61–62
 Catholicism, 2–3
 childhood, 1–4
 children, 61–63
 education, 2–3, 5–10
 family background, 1–2, 5, 8
 hobbies and interests, 2, 4, 9, 61–62
 marriages, 7–9, 11–13, 61–63
 military service, 3–6
 parents, 1–2, 4, 63
 residences, 8, 11–14, 60–61, 63
 siblings, 2, 5, 63
therapeutics, 11, 31, 45
Thymoglobulin, 36, 40–41
Tilburg, 1–2
tissue plasminogen activator (t-PA), 16, 23–24, 27
Tolvamer, 40
treatment cost. *see* drug pricing

U

unions, 12–13, 47
United Kingdom, 5–8, 19, 21–22, 43, 49–50, 62
United States
 Baxter International in, 14–15
 breast cancer testing, 45
 first impressions, 7–9
 vs. India, 47–48
 markets, 13, 37–39, 41
 regulations and compliance, 26, 31, 43
 role in future of biotech, 55
University of Rotterdam, 5
University of Virginia, 7–10
US Centers for Disease Control (CDC), 11, 45
US Food and Drug Administration (FDA), 21, 27,
 33–38, 41, 43, 51, 58

V

venture capital, 18–19, 54
vertical integration, 22, 37–39, 57
Viehbacher, Christopher A., 59–60
Vietnam, 31

W

Washington, DC, 30–32, 34, 55, 62
Weld, Bill, 28–29
wellness, 46–47
Whatman Biochemicals, 19
Whitesides, George, 20, 38
Wiggans, Thomas C., 33
World War II, 11, 14