George Sperling

• Publications
• Reprintings of Publications
• Unpublished Bell Laboratories Technical Memoranda
• Talks at Conferences and Meetings of Professional Societies
• Invited Lectures at Universities and Institutes
Publications


Reprintings of Publications

(A partial list of books in which the articles, whose journal references were given above, have been reprinted. Not up to date.)

* Indicates the entire volume of the journal was reprinted.

The information available in brief visual presentations (1960).


Short-term storage of information in vision (1961).


Linear theory and the psychophysics of flicker (1964).

Successive approximations to a model for short-term memory (1967).
3a. Translated into Italian by Franco Angeli Editori, Milan, Italy, 1970.

Computer Papers

Sperling/Landy/Cohen/Pavel, Intelligible encoding of ASL image sequences at extremely low information rates.

Bell Labs Technical Memoranda


Talks at Conferences and Meetings of Professional Societies

† Indicates an invited address.
†† Indicates a plenary address.
* Indicates an abstract of talk was published.
Unless otherwise noted, items indicate talks given by George Sperling

1962 †Symposium on Memory (Sponsored by the Office of Naval Research), Austin, Texas, January 25, 1962. Two Kinds of Human Memory.
1962 †Symposium on Information Processing in Man: Research Frontiers (Sponsored jointly by the Human Factors Society and the University of Southern California), Los Angeles, California, June 23, 1962. A Model for Visual Memory Tasks.


1968 †Mathematical Psychology Meetings. Stanford University, Palo Alto, California, August 29, 1968. Structural Considerations in Models of Memory. (Incorporated into Group Discussion).


1970 † Symposium on Memory, Experimental Psychology Society (Great Britain), National Hospital, Queens Square, London, January 3, 1970. Structural Factors in Memory.


1970 † Workshop on Processing Models in Perception and Psychophysics, Miami Beach, Florida, August 26, 1970. (Sponsored by the National Science Foundation, the Mathematical Social Science Board, and the Center for Advanced Study in the Behavioral Sciences.) Elementary Neural Models for Perceptual Phenomena.


†HIPS is the Human Information Processing Laboratory’s Image Processing System.


1988 †Sperling, George. Visual Form and Motion Perception: Psychophysics, Computation, and Neural Networks. (Meeting dedicated to the memory of the late Kvetoslav Prazdny.) Boston University, Massachusetts. Fourier and Non-Fourier Perception of Motion and Orientation. Saturday, March 5, 1988.


1990 †Sperling, George. Sigraph Conference, Pace University, New York, NY, October 14, 1990 *Perceptual Basis of Three-Dimensional Vision


1995 Sperling, G. †Symposium to Honor R. Duncan Luce, University of California, Irvine, California. August 2, 1995. *Quantal versus Continuous Dynamics of Spatial Attention*


2000 †Sperling, G. Optical Society of America, Providence, Rhode Island, Workshop on Chromatic Motion Mechanisms, October 23. *The Mechanism of Isoluminant Red-Green Motion Perception*


2001 Sperling, G. Twenty-Sixth Annual Interdisciplinary Conference, Jackson, Wyoming, January 25, 2001 Measuring iconic memory with EEG.


2001 *Tseng, C.-h., and Sperling, G. Talk presented by Chia-huei Tseng. International Conference on Cognitive Science, Beijing, China August 27, 2001. Sensitization to color: Induced by instructions, measured by motion


2002 Sperling, G. Twenty-Seventh Annual Interdisciplinary Conference, Jackson, Wyoming, February 5, 2002 *Third-order Motion and Motion Standstill*


2002 Sperling, George. 98th Annual Meeting of the Society of Experimental Psychologists University of California, Berkeley April 6, 2002 *Third-Order Motion.*


2004  †Sperling, G. 11th Joint Symposium on Neural Computation, University of Southern California, Los Angeles, California, May 15, 2004. *A linear systems approach to modeling the spatial distribution of visual attention.


2005  Sperling, G. An Anniversary Conference Celebrating Steve Grossberg@65 and CNS@15, Department of Cognitive and Neural Sciences, Boston University, September 16, 2005. *Some simple neural circuits for brain micro-instructions.*


2006  Sperling, G. and Ding, J. 102nd Annual Meeting of the Society of Experimental Psychologists University of California, San Diego March 24, 2006 *A Model for Binocular Combination: A neurally-plausible mathematical theory of how the two eyes combine information and some supporting evidence* 


2006 *Sperling, G., and Ding, J. Vision Sciences Society, Sarasota, Florida, May 9, 2006, *An Early Gain-Control Mechanism in Binocular Combination*


2006 †Sperling, G., and Ding, J. 12th Joint Symposium on Neural Computation, University of California, San Diego, California, May 20, 2006. *Deriving the Parameters of Binocular Combination.*


2006 *Tseng, C.-h., and Sperling, G. Talk presented by Chia-huei Tseng. XXIX European Conference on Visual Perception, Saint Petersburg, Russia, August 21, 2006. *Two distinct attentional mechanisms revealed by the third-order motion paradigm*


2010 Sperling, G. Thirty-Fifth Annual Interdisciplinary Conference, Jackson, Wyoming, Modeling the time course of the first few seconds of binocular rivalry.


2013 George Sperling, Sun Peng, Charles E. Wright, and Charles Chubb Talk presented by G. Sperling. Twelfth Annual Summer Interdisciplinary Conference, Cortina d’Ampezzo, Italy, July 26, 2013. Using centroid judgments to measure attention filtering

2013 ††*Sperling, G. Fall Vision Meeting, Optical Society of America, School of Optometry, University of Houston, Houston, Texas. October 5, 2013. Measuring the time course of the information available in brief visual presentations.


Invited Lectures at Universities and Institutes


1963 Vassar College, Department of Psychology Colloquium, December 11, 1963. *Short-Term Memory.*


1964 Duke University, Department of Psychology Colloquium, April 29, 1964. *Short-Term Memory.*

1964 University of Pennsylvania, Department of Psychology Colloquium, April 15, 1964. *Short-Term Memory.*


1965 Northeastern University, Department of Psychology Colloquium, March 5, 1965. *Processing Visual Information.*


1967 University of Michigan, Mental Health Research Center, Interdisciplinary Colloquium, January 24, 1967. *Models of Short-Term Memory.*


1968 University of California, Los Angeles, Regular Psychology Colloquium, January 11, 1968. *Short-Term Memory.*
1968 University of California, San Diego, Graduate Psychology Colloquium, February 8, 1968. Short-Term Auditory Memory.


1968 McMaster University, Department of Psychology Colloquium. April 26, 1968. Short-Term Auditory Memory.


1968 University of California, Santa Barbara, Department of Psychology, Colloquium, December 16, 1968. Auditory Short-Term Memory.

1969 Rockefeller University, New York, Colloquium, May 2, 1969 Short-Term Memory. auditory?


1970 Birkbeck College (University of London), Department of Psychology Colloquium, January 27, 1970. The Structure of Short-Term Memory.


1970 University of Edinburgh, Edinburgh, Scotland, Department of Psychology Colloquium, January 29, 1970. The Structure of Short-Term Memory.

1970 University of Strathclyd, Glasgow, Scotland, Department of Psychology Colloquium, January 30, 1970. The Structure of Short-Term Memory.


1971 University of Western Australia, Perth, Western Australia, Department of Psychology Colloquium, July 13, 1971. *Extremely Rapid Visual Search.*


1972 University of Massachusetts, Amherst, Massachusetts, Department of Psychology Colloquium, October 16, 1972. *Extremely Rapid Visual Search.*


1974 Georgia Institute of Technology, Atlanta, Georgia, Department of Psychology Colloquium, April 25, 1975. *Extremely Rapid Visual Search.*


1977 University of Toronto and School of Graduate Studies, Toronto, Ontario Canada. 


1979 Rockefeller University, New York, N.Y. 


1981 Rutgers University, Busch Campus, New Brunswick, N.J., Department of Psychology Colloquium, May 6, 1981. Time, Distance, and Feature Trade-offs in Visual Apparent Motion.


1981 University of Maryland, College Park, MD., Department of Psychology Colloquium, November 4, 1981. Measuring Attention.


1982 Northeastern University, Boston, Massachusetts, Department of Psychology Colloquium, October 21, 1982. *Image Processing of American Sign Language.*


1984 Stanford University, Stanford, California, Department of Psychology, Friday Seminar, February 17, 1984. *Attentional Theory of Information in Short-Term Visual Memory*


1984 University of California, Santa Cruz, Santa Cruz, California, Departmental Colloquium, Program in Experimental Psychology, March 9, 1984. *A Unified Theory of Attention and Signal Detection.*


1984 University of California, Los Angeles, California, Department of Psychology Colloquium, April 5, 1984. *A Unified Theory of Attention and Signal Detection.*

1984 University of California at San Diego, La Jolla, California, Vision Lab Lunch Talk, April 19, 1984. *The Mechanism of Human Short-Range Motion Perception.*

1984 University of California at San Diego, La Jolla, California, Department of Psychology Colloquium, April 19, 1984. *Image Processing and the Logic of Perception.*

1984 School of Optometry, University of California, Berkeley, California, Oxyopia Colloquium, April 23, 1984. *Mechanisms of Short-Range Motion Perception.*


1984 Department of Psychology Colloquium, Johns Hopkins University, Baltimore, Maryland, October 24, 1984. *The Logic of Perception.*

1984 Colloquium, Center for Adaptive Systems, Department of Mathematics, Boston University, Boston, Massachusetts, November 28, 1984. *The Dynamics of Visual Attention.*


1989 Department of Speech and Hearing Science, Co-Sponsored by Department of Psychology, Ohio State University, Columbus, Ohio, May 22, 1989. Information Processing of Visual Language -- ASL.


1990 Special Colloquium, Istituto di Neurofisiologia del C.N.R., Pisa, Italy, April 17, 1990. Linear and nonlinear visual processing.


1990 Rutgers University, Newark College of Arts and Sciences Psychology Department Colloquium, October 15, 1990. Computational Theories of Attention.


1991 Shanghai Institute of Technical Physics, Shangahi, China, June 17, 1991. *How the Human Visual System Computes Visual Motion* [Host: Prof. Kuang, Ding Bo (Director, SITP); Translators: Dr. Zhang, Ming and Chen, Lulin.]

1991 Department of Computer Science, Shanghai Information-Technology Engineers Examination Center, Fudan University, Shangahi, China, June 18, 1991. *Neural Principles of Preprocessing for Human Pattern Recognition.* [Host: Prof. Wu, Lide (Director, SITEEC).]

1991 Department of Electronic Science and Technology, Institute of Applied Electronics, East China Normal University, Shangahi, China, June 20, 1991. *Measuring Attention and How the Human Visual System Computes Visual Motion* [Host: Prof. Weng, Moying (Chairman and Director); Translator: Dr. Zhang, Ming.]

1991 Department of Psychology, Beijing University, and Institute of Psychology, Chinese Academy of Sciences, Beijing, China, June 25, 1991. [Host: Prof. Jing, Qicheng (Director, Institute of Psychology)]
   Morning: *The Efficiency of Perception* [Translators: Dr. Zhang, Ken and Prof. Jing, Qicheng.]
   Afternoon: *Measuring Attention.* [Translator: Luo, Chun-Rong.]

1991 Computational Vision Laboratory, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, June 28, 1991. *First- and Second-Order Motion Perception.* [Host: Prof. Wang Shuo-Rong (Director, Institute of Biophysics); Translator: Prof. Wang, Yun-Jiu (Laboratory Director).]

1991 New York University, Cognitive Sciences Colloquium, September 12, 1991. *Is There Attentional Filtering of Items by Feature as Well as by Location?*

1992 Center for Adaptive Systems Boston University, February 25, 1992. *Is There Attentional Selection of Items by Feature as Well as by Location?*


1994 Ohio State University, Columbus, College of Optometry. May 9, 1994:


1996 Marschack Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences, sponsored by the Anderson School and the Department of Economics, with support from the Anderson School Dean, the School of Public Policy and Social Research Dean, the Blum Kovler Foundation, and the Sidney Stern Memorial Trust. University of California at Los Angeles, Los Angeles, CA, March 1, 1996. *The Economics of Attention, and Other Tales.*

1996 Dedication Ceremony for the new Cognitive and Neural Systems Building, Boston University, Boston, Massachusetts, April 19, 1996. *Atoms of the Mind.*

- Erik Blaser and George Sperling: *Semantic Motion.*


1996 Department of Psychology, University of Western Sydney, Macarthur, Campbelltown NSW 2560 Australia, July 29, 1996.
- Psychology Colloquium. *Atoms of the Mind: An Historical Overview of Theories of Attention.*


1996 Psychology Colloquium, University of Western Australia, Nedlands Australia.
Stages of Human Visual Perception.


1999 University of Freiburg, Freiburg, Germany, Departments of Neurology and Psychology, Joint Colloquium, September 1, 1999. *Three systems of Visual Motion Perception: Historical Review, Current Status.*


2000 University of Trier, Germany, Psychology Department Colloquium, September 7, 2000. *Measuring and modeling the dynamics of visual spatial attention.*


2000 Rutgers, The State University, Busch Campus, Piscataway, New Jersey, Center for Cognitive Science Colloquia Series, October 24, 2000. *Measuring and modeling visual attention*


2001  Department of Psychology, University of Tokyo, Bunkyo-ku, Tokyo, Japan. September 7, 2001. *The three systems theory of human visual motion perception: Review and Update*


2002  Cognitive Seminar Series, Department of Psychology, University of California at Los Angeles, Los Angeles, CA, October 4, 2002. *Motion and Attention: A review and update of the three systems theory of motion perception with demonstrations that an attention mechanism--the salience field--is a critical component of third-order motion perception, and illustrations of the use of third-order motion perception to quantitatively measure attentional amplification and to clarify the mechanisms of object perception.*

2002  University of Southern California, Neuroscience Colloquium Series, October 9, 2002. *Motion and Attention.*

2002  University of California, San Diego, La Jolla, CA, Department of Psychology Colloquium, October 17, 2002. *Motion and Attention: A review and update of the three systems theory of motion perception with demonstrations of an attention mechanism--the salience field--that is a critical component of third-order motion perception, and illustrations of the use of third-order motion perception to quantitatively measure attentional amplification and to clarify mechanisms of object perception.*

2003  University of California, Irvine Institute of Brain Aging and Dementia, Alzheimer’s Center Seminar Series, Colloquium, April 21, 2003. *A partial inventory of psychophysical paradigms that have been used to infer neural mechanisms of motion perception and attention.*


2004 Departments of Psychology and of Neurology, University of Regensburg, Regensburg, Germany, Special Colloquium, June 25, 2004. *Eye Movements, Image Movements, and Attention*


2006 Department of Psychology, National Taiwan University, Taipei, R.O.C. Colloquium. October 18, 2006. *The functional architecture of visual attention.*


2015 Department of Psychology, Justus-Liebig-Universitaet, Giessen, Germany, Colloquium, June 29, 2015. *Visual attention as a filtering process that can be efficiently measured quantitatively by centroid methods.*

2015 Leibniz Institute for Psycholgie Information, ZPID, Trier, Germany, Colloquiua Traverensia, July 1, 2015. *Deriving computational models for the brain processes of visual attention.*