LAWRENCE E. MARKS

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*Education* A.B., Psychology, Hunter College, CUNY, 1962

Ph.D., Psychology, Harvard University, 1965

Post-doctoral Fellow, Center for Cognitive Studies, Harvard

University, 1965-1966

*Summary of Career From* *To*

*Scientific*

Harvard University

Research Fellow and Lecturer 1965 1966

Yale University

Research Staff Psychologist 1966 1969

Instructor in Epidemiology 1968 1970

Assistant Professor of Epidemiology 1970 1976

Research Associate in Psychology 1971 1976

Associate Professor of Epidemiology and Psychology 1976 1984

Professor of Epidemiology (Environmental 1984 2012

Health Sciences) and Psychology 2012 2017

Senior Research Scientist and Emeritus Professor

of Epidemiology (Environmental Health

Sciences) 2017 present

John B. Pierce Laboratory

Assistant Fellow 1966 1969

Associate Fellow 1969 1984

Fellow 1984 2017

Emeritus Fellow 2017 present

*Administrative*

John B. Pierce Laboratory

Associate Director 1985 1988

Acting Director 1989 1989

Director 1999 2009

Emeritus Director 2009 present

*Honors*

Hunter College Hall of Fame, 1985

Jacob K. Javits Neuroscience Investigator Award/Claude Pepper Award,

National Institutes of Health, 1987-1994

President, Division 10, Psychology of the Arts, American Psychological

Association, 1988-1989

*Philosophiae doctorem* *honoris causa*, Stockholm University, 1994

Honorary Main Researcher, Division of Perception and Psychophysics,

Department of Psychology, Stockholm University, 1995-

Fellow, Society of Experimental Psychologists, 2004-

Connecticut Academy of Science and Engineering, 2014-

Winslow Centennial Honor Roll for Excellence and Service (Association of Yale Alumni in Public Health), 2015

*Scientific Organizations*

American Association for the Advancement of Science (Fellow)

American Psychological Association (Fellow)

Association for Chemoreception Sciences

Association for Psychological Science (Fellow)

History of Science Society

New York Academy of Sciences (Fellow)

Psychonomic Society (Fellow)

Society for Neuroscience

*Scientific Organizations (former)*

Acoustical Society of America

Eastern Psychological Association

Optical Society of America

*Other Professional Activities*

Advisory Committees and Consultancies

Institutional Review Board for the Protection of Human Subjects, Haskins Laboratories, 1978-1980

Advisor, Psychophysics and Sensory Prostheses, Division of Artificial Organs, Columbia-Presbyterian Hospital, New York, NY, 1980-1982

Institute for Artificial Organs/Dobelle Institute, New York, NY, 1982-1988

Human Rights Committee, Benhaven School for Autistic Children, 1982-1990

Executive Committee, Division 10, Psychology of the Arts, American Psychological Association, 1986-1989

Chair, Fellows Committee, Division 10, Psychology of the Arts, American Psychological Association, 1991-1993

Advisor, Chemosensory Center, University of Cincinnati, 1987

Advisor, Development of Modular Units for Undergraduate Science Education, Columbia University, 1993-1994

Expert member to Appointment Board, Professorship in Perception and Psychophysics, Department of Psychology, School of Social Sciences, Stockholm University, 1993

Advisor, Institute for Sensory Research, Syracuse University, 1994

Advisor, Assessing the Potential of Virtual Reality in Science Education, University of Houston/ George Mason University, 1994-1995

Executive Committee, International Society for Psychophysics, 1995-1997

Advisor, Olfactory Clinical Research Center, SUNY Medical Center, Albany, 1998-1999

Scientific Advisory Committee, Children's Progress, Inc., 1999-2007

Human Effects Assessment Panels and Technology Effectiveness Assessment Panels, Pennsylvania State University/ Department of Defense, 2001- 2014 (ad hoc)

Board of Directors, American Synesthesia Association, 2005-

Expert member to Appointment Board, Professorship in Perception and Psychophysics, Department of Psychology, School of Social Sciences, Stockholm University, 2009

External Advisory Board, Rethinking the Senses, Centre for the Study of the Senses, Institute of Philosophy, University of London, 2013-2015

Editorial Boards

Editor, *Sensory Processes*, 1976-1981

Consulting Editor, *Journal of Experimental Psychology: Human Perception and Performance,* 1986-1995

Consulting Editor, *Perception & Psychophysics*, 1991-1998

Consulting Editor, *Chemical Senses*, 1994-2000

Visiting Appointments

Laboratory of Applied Psychology, University of Stockholm, 1981, 1982

Department of Psychology, University of Stockholm, 1988

Mathematical Social Behavioral Sciences, University of California, Irvine, 1991

MRC Applied Psychology Unit, Cambridge, England, 1991

Grant Review Panels

Sensory Disorders and Language Study Section / Integrative Functional, and

Cognitive Neuroscience Study Section, National Institutes of Health, 1995-1999

Ad Hoc Reviewer/Grant Proposals and Grant Reports

Air Force Office of Scientific Research

Commonwealth of Pennsylvania Department of Health

Connaught Fund, University of Toronto

Economic and Social Research Council, UK

Health Research Board in Ireland

Killam Foundation of Canada

Leverholme Trust

Medical Research Council of Canada

National Institutes of Health

National Science Foundation

Natural Sciences and Engineering Research Council of Canada

Netherlands Organisation for Scientific Research

Social Sciences and Humanities Research Council of Canada

Veterans Administration

Wellcome Trust, UK

Ad Hoc Reviewer/Journals

Acta Psychologica

American Journal of Psychology

American Scientist

Appetite

Artificial Organs

ASHRAE Transactions

Attention, Perception, & Psychophysics

Behavioral and Brain Sciences

British Journal of Psychology

Canadian Journal of Experimental Psychology

Canadian Journal of Psychology

Cerebral Cortex

Chemical Senses

Chemosensory Perception

Child Development

Cognition

Cognition and Consciousness

Cognitive, Affective, and Behavioral Neuroscience

Cognitive Brain Research

Cortex

Current Directions in Psychological Science

Developmental Psychology

Developmental Science

Environment International

Experimental Brain Research

European Journal of Developmental Psychology

Food Quality and Preference

Frontiers in Human Neuroscience

IEEE Transactions on Haptics

Journal of the Acoustical Society of America

Journal of Applied Physiology

Journal of Autism and Developmental Disorders

Journal of Experimental Child Psychology

Journal of Experimental Psychology: Applied

Journal of Experimental Psychology: Human Perception and Performance

Journal of Gerontology

Journal of Memory and Language

Journal of the Optical Society of America

Journal of Speech, Language, and Hearing Research

Journal of Vision

Leonardo

Memory & Cognition

Multisensory Research

Music Perception

Nordic Psychology

Perception

Perception & Psychophysics

Perceptual and Motor Skills

Philosophical Psychology

Physiology & Behavior

Pragmatics and Cognition

Psychological Bulletin

Psychological Review

Psychological Science

Psychonomic Bulletin & Review

Science

Somatosensory Research

Vision Research

*Courses Taught (Yale University)*

Past

History of Psychology (Yale College)

Sensory Processes (Yale College)

Psychology and the Arts (Yale College)

Sensation (Yale Graduate School)

Sensory Responses to Physical Factors in the Environment (Epidemiology

and Public Health, Yale School of Medicine)

Physiology for Environmental Health Sciences (Epidemiology & Public

Health, Yale School of Medicine)

Physical Factors in the Environment (Epidemiology & Public Health, Yale

School of Medicine)

Sensory Information Processing (Yale College/Yale Graduate School)

*Extramural Funding (PI/co-PI)*

Past

National Institute on Deafness and Other Communication Disorders (NINDC)

National Institute of Mental Health (NIMH)

National Institute of Neurological Disorders and Stroke (NINDS)

National Science Foundation (NSF)

United States-Israel Binational Science Foundation (BSF)

Current

National Institutes of Health: R01 DC011823

*Perception of Flavor Quality: Multisensory and Cognitive Processes*

3/1/2012 - 2/28/2017 (Lawrence E. Marks, PI)

(no-cost extension to 2/28/2018)

**PUBLICATIONS**

**JOURNAL ARTICLES**

1. Marks, L.E., & Miller, G.A. (1964). The role of semantic and syntactic constraints in the memorization of English sentences. *Journal of Verbal Learning and Verbal Behavior,* **3**, 1-5.
   1. Reprinted in: (1966). D.H. Kausler (Ed.), *Verbal Learning: Contemporary Theory and Research* (pp. 346-350). New York: Wiley.
   2. Reprinted in: (1969). L. Postman and G. Keppel (Eds.), *Verbal Learning and Memory* (pp. 254-262). New York: Penguin.
2. Stevens, J.C., & Marks, L.E. (1965). Cross-modality matching of brightness and loudness. *Proceedings of the National Academy of Sciences,* **54**, 407-411.
3. Marks, L.E., & Stevens, J.C. (1966). Individual brightness functions. *Perception & Psychophysics,* **1**, 17-24.
4. Marks, L.E. (1966). Brightness as a function of retinal locus. *Perception & Psychophysics*, **1**, 335-341.
5. Marks, L.E., & Slawson, A.W. (1966). Direct test of the power function for loudness. *Science,* **154**, 1036-1037.
6. Marks, L.E. (1967). Judgments of grammaticalness of some English sentences and semi-sentences. *American Journal of Psychology,* **80**,196-204.
7. Marks, L.E. (1967). Some structural and sequential factors in the processing of sentences. *Journal of Verbal Learning and Verbal Behavior*, **6**, 707-713.
8. Stevens, J.C., & Marks, L.E. (1967). Apparent warmth as a function of thermal irradiation. *Perception & Psychophysics,* **2**, 613-619.
9. Marks, L.E. (1968). Brightness as a function of retinal locus in the light-adapted eye. *Vision Research,* **8**, 525-535.
10. Adair, E.R., Stevens, J.C., & Marks, L.E. (1968). Thermally induced pain, the dol scale, and the psychophysical power law. *American Journal of Psychology,* **81**, 147-164.
11. Marks, L.E. (1968). Scaling of grammaticalness of self-embedded English sentences. *Journal of Verbal Learning and Verbal Behavior,* **7,** 965-967.
12. Marks, L.E., & Stevens, J.C. (1968). Perceived warmth and skin temperature as functions of the duration and level of thermal irradiation. *Perception & Psychophysics,* **4**, 220-228.
13. Marks. L.E., & Stevens, J.C. (1968). The form of the psychophysical function near threshold. *Perception & Psychophysics*, **4**, 315-318.
14. Marks, L.E. (1968). Stimulus range, number of categories, and form of the category scale. *American Journal of Psychology*, **81**, 467-479.

Reprinted in: (1972) Cain, W.S., & Marks, L.E. (Eds.), *Stimulus and Sensation:* Readings in Sensory Psychology. Boston: Little, Brown.

1. Stevens, J.C., Marks, L.E., & Gagge, A.P. (1969). The quantitative assessment of thermal discomfort. *Environmental Research*, **2**, 149-165.
2. Bothe, G.G., & Marks, L.E. (1970). Absolute sensitivity to white noise under auxiliary visual stimulation. *Perception & Psychophysics*, **8**, 176-178.
3. Marks, L.E. (1970). Apparent depth of modulation as a function of frequency and amplitude of temporal modulations of luminance. *Journal of the Optical Society of America*, **60**, 970-977.
4. Marks, L.E. (1971). Brightness and retinal locus: Effects of target size and spectral composition. *Perception & Psychophysics*, **9**, 26-30.
5. Stevens, J.C., & Marks, L.E. (1971). Spatial summation and the dynamics of warmth sensation. *Perception & Psychophysics*, **9**, 391-398.
6. Marks, L.E. (1971). Spatial summation in relation to the dynamics of warmth sensation. *International Journal of Biometeorology*, **15**, 106-110
7. Marks, L.E., & Cain, W.S. (1972). Perception of intervals and magnitudes for three prothetic continua. *Journal of Experimental Psychology*, **94**, 6-17.
8. Stevens, J.C., & Marks, L.E. (1972). Brightness function: Role of the pupil. *Perception & Psychophysics*, **6**, 403-405.
9. Marks, L.E. (1972). Visual brightness: Some applications of a model. *Vision Research*, **12**, 1409-1423.
10. Marks, L.E., & Stevens, J.C. (1972). Perceived cold and skin temperature as functions of stimulation level and duration. *American Journal of Psychology*, **85**, 407-419.
11. Bornstein, M.H., & Marks, L.E. (1972). Photopic luminosity measured by the method of critical frequency. *Vision Research*, **12**, 2023-2033.
12. Marks, L.E. (1973). Brightness and equivalent intensity of intrinsic light. *Vision Research*, **13**, 372-382.
13. Marks, L.E., & Stevens, J.C. (1973). Spatial summation of warmth: Influence of duration and configuration of the stimulus. *American Journal of Psychology*, **86**, 251-267.
14. Marks, L.E., & Bornstein, M.H. (1973). Spectral sensitivity by constant CFF: Effect of chromatic adaptation. *Journal of the Optical Society of America*, **63**, 220-226.
15. Bornstein, M.H., & Marks, L.E. (1973). Studies on spectral sensitivity as measured by a procedure of flicker threshold. *Journal of the American Academy of Optometry*, **50**, 376-382.
16. Stevens, J.C., Okulicz, W.C., & Marks, L.E. (1973). Temporal summation at the warmth threshold. *Perception & Psychophysics*, **14**, 307-312.
17. Marks, L.E., & Stevens, J.C. (1973). Temporal summation related to the nature of the proximal stimulus for the warmth sense. *Perception & Psychophysics*, **14**, 570-576.
18. Marks, L.E. (1974). On associations of light and sound: The mediation of brightness, pitch, and loudness. *American Journal of Psychology*, **87**, 173-188.
19. Marks, L.E., & Gonzalez, R.R. (1974). Skin temperature modifies the pleasantness of thermal stimuli. *Nature*, **247**, 473-475.
20. Marks, L.E., & Bornstein, M.H. (1974). Spectral sensitivity of the modulation-sensitive mechanism of vision. *Vision Research*, **14**, 665-669.
21. Stevens, J.C., Marks, L.E., & Simonson, D. (1974). Regional sensitivity and spatial summation in the warmth sense. *Physiology & Behavior*, **13**, 825-836.
22. Marks, L.E. (1974). On scales of sensation: Prolegomena to any future psychophysics that will be able to come forth as science. *Perception & Psychophysics*, **16**, 358-376.
23. Marks, L.E. (1974). Blue-sensitive cones can mediate brightness. *Vision Research*, **14**, 1493-1494.
24. Marks, L.E. (1975). On colored-hearing synesthesia: Cross-modal translations of sensory dimensions. *Psychological Bulletin*, **82**, 303-331.

Reprinted in: (1997). S. Baron-Cohen & J. E. Harrison (Eds.), *Synaesthesia: Classic and Contemporary Readings* (pp. 49-98). Oxford: Blackwell.

1. Taus, R.H., Stevens, J.C., & Marks, L.E. (1975). Spatial localization of warmth. *Perception & Psychophysics,* ***19***, 194-196.
2. Marks, L.E., Stevens, J.C., & Tepper, S.J. (1976). Interaction of spatial and temporal summation in the warmth sense. *Sensory Processes*, **1**, 87-98.
3. Aylor, D.E., & Marks, L.E. (1976). Perception of noise transmitted through barriers. *Journal of the Acoustical Society of America*, **59**, 397-400.
4. Marks, L.E. (1977). Relative sensitivity and possible psychophysical laws. *Sensory Processes*, **1**, 301-315.
5. Marks, L.E. (1978). Binaural summation of the loudness of pure tones. *Journal of the Acoustical Society of America*, **64**, 107-113.
6. Marks, L.E. (1978). A critique of Dawson and Miller’s “Inverse attribute functions and the proposed modifications of the power law.” *Perception & Psychophysics*, **24**, 569-570.
7. Marks, L.E. (1979). Sensory and cognitive factors in judgments of loudness. *Journal of Experimental Psychology: Human Perception and Performance*, **5**, 426-443.
8. Marks, L.E. (1979). A theory of loudness and loudness judgments. *Psychological* *Review*, **86**, 256-285.
9. Stevens, J.C., & Marks, L.E. (1979). Spatial summation of cold. *Physiology & Behavior*, **22**, 541-547.
10. Marks, L.E., & Bartoshuk, L.M. (1979). Ratio scaling of taste intensity by a matching procedure. *Perception & Psychophysics*, **26**, 335-339.
11. Marks, L.E. (1979). Summation of vibrotactile intensity: An analog to auditory critical bands? *Sensory Processes*, **3**, 188-203.
12. Marks, L.E. (1980). Psychophysical judgment: Wundt’s theory revisited. *Psychological Research*, **42**, 157-164.
13. Marks, L.E. (1980). Binaural summation of loudness: Noise and two-tone complexes. *Perception & Psychophysics*, **27**, 489-498.
14. Stevens, J.C., & Marks, L.E. (1980). Cross-modality matching functions generated by the method of magnitude estimation. *Perception & Psychophysics*, **27**, 379-389.
15. Marks, L.E. (1982). Synesthetic perception and poetic metaphor. *Journal of Experimental Psychology: Human Perception and Performance*, **8**, 15-23.
16. Marks, L.E. (1982). Bright sneezes and dark coughs, loud sunlight and soft moonlight. *Journal of Experimental Psychology: Human Perception and Performance*, **8**, 177-193.
17. Gray, L., Stevens, J.C., & Marks, L.E. (1982). Thermal stimulus thresholds: Sources of variability. *Physiology & Behavior*, **29**, 355-360.
18. Girvin, J.P., Marks, L.E., Antunes, J.L., Quest, D.O., O’Keefe, M.D., Ning, P., & Dobelle, W.H. (1982). Electrocutaneous stimulation. I. The effects of stimulus parameters on absolute threshold. *Perception & Psychophysics*, **32**, 524-528.
19. Marks, L.E., Girvin, J.P., Quest, D.O., Antunes, J.L., Ning, P., O’Keefe, M.D., & Dobelle, W.H. (1982). Electrocutaneous stimulation. II. The estimation of distance between two points. *Perception & Psychophysics*, **32**, 529-536.
20. Marks, L.E., Girvin, J.P., O’Keefe, M.D., Ning, P., Quest, D.O., Antunes, J.L., & Dobelle, W.H. (1982). Electrocutaneous stimulation. III. The perception of temporal order. *Perception & Psychophysics*, **32**, 537-541.
21. Marks, L.E. (1983). Similarities and differences among the senses. *International Journal of Neuroscience*, **19**, 1-11.
22. Marks, L.E., Borg, G., & Ljunggren, G. (1983). Individual differences in perceived exertion assessed by two new methods. *Perception & Psychophysics*, **34**, 280-288.
23. Borg, G.A.V., & Marks, L.E. (1983). Twelve meanings of the measure constant in psychophysical power functions. *Bulletin of the Psychonomic Society*, **21**, 73-75.
24. Alexander, B., & Marks, L.E. (1983). Aesthetic preference and resemblance of personality to paintings. *Bulletin of the Psychonomic Society*, **21**, 384-386.
25. Algom, D., & Marks, L.E. (1984). Individual differences in loudness processing and loudness scales. *Journal of Experimental Psychology: General*, **113**, 571-593.
26. Jones, B.L., & Marks, L.E. (1985). Picture quality assessment: A comparison of ratio and ordinal scales. *Society of Motion Picture and Television Engineers Journal*, **94**, 1244-1248.
27. Kauschansky, A., Seyler, L.E. Jr., Marks, L.E., Cain, W.S., & Genel. M. (1986). Familial Kallmann’s Syndrome with autosomal dominant inheritance, variable gonadotropin deficiency and subtle color vision defects. *International Journal of Adolescent Medicine and Health,* **2**, 81-97.
28. Marks, L.E. (1986). Context and sensory processes: In search of basic laws. *Cahiers de Psychologie Cognitive*, **6**, 121-136.
29. Bartoshuk, L.M., Rifkin, B., Marks, L.E., & Bars, P. (1986). Taste and aging. *Journal of Gerontology*, **41**, 51-57.
30. Marks, L.E., Szczesiul, R., & Ohlott, P. (1986). On the cross-modal perception of intensity. *Journal of Experimental Psychology: Human Perception and Performance*, **12**, 517-534.
31. Marks, L.E., Hammeal, R.J., & Bornstein, M.H. (1987). Perceiving similarity and comprehending metaphor. *Monographs of the Society for Research in Child Development*, **42** (1, Serial No. 215), 1-91.
32. Marks, L.E. (1987). Binaural versus monaural loudness: Supersummation of tone partially masked by noise. *Journal of the Acoustical Society of America*, **81**, 122-128.
33. Marks, L.E. (1987). On cross-modal similarity: Perceiving temporal patterns by hearing, touch, and vision. *Perception & Psychophysics*, **42**, 250-256.
34. Marks, L.E. (1987). On cross-modal similarity: Auditory-visual interactions in speeded discrimination. *Journal of Experimental Psychology: Human Perception and Performance*, **13**, 384-394.
35. Marks, L.E., Stevens J.C., Bartoshuk, L.M., Gent, J.F., Rifkin, B., & Stone, V.K. (1988). Magnitude-matching: The measurement of taste and smell. *Chemical Senses*, **13**, 63-87.
36. Marks, L.E. (1988). Magnitude estimation and sensory matching. *Perception & Psychophysics*, **43**, 511-525.
37. Bartoshuk, L.M., Rifkin, B., Marks, L.E., & Hooper, J. (1988). Bitterness of KCl and benzoate: Related to genetic status for sensitivity to PTC/PROP. *Chemical Senses*, **13**, 517-528. 1989.
38. Algom, D., & Marks, L.E. (1989). Memory psychophysics for taste. *Bulletin of the Psychonomic Society*, **27**, 257-259.
39. Marks, L.E. (1989). On cross-modal similarity: The perceptual structure of pitch, loudness, and brightness. *Journal of Experimental Psychology: Human Perception and Performance*, **15**, 586-602.
40. Melara, R.D., & Marks, L.E. (1990). Perceptual primacy of dimensions: Support for a model of dimensional interaction. *Journal of Experimental Psychology: Human Perception and Performance*, **16**, 398-414.
41. Melara, R.D., & Marks, L.E. (1990). HARD and SOFT interacting dimensions: Differential effects of dual context on classification. *Perception & Psychophysics*, **47**, 307-325.
42. Melara, R.D., & Marks, L.E. (1990). Dimensional interaction in language processing: Investigating directions and levels of crosstalk. *Journal of Experimental Psychology: Learning, Memory, and Cognition,* **16**, 539-554.
43. Algom, D., & Marks, L.E. (1990). Range and regression, loudness processing and loudness scales: Toward a context-bound psychophysics. *Journal of Experimental Psychology: Human Perception and Performance*, **16**, 706-727.
44. Melara, R.D., & Marks, L.E. (1990). Processes underlying dimensional interactions: Correspondences between linguistic and nonlinguistic dimensions. *Memory &* *Cognition*, **18**, 477-495.
45. Melara, R.D., & Marks, L.E. (1990). Interaction among auditory dimensions: Loudness, pitch, and timbre. *Perception & Psychophysics*, **48**, 169-178.
46. Marks, L.E. (1991). Reliability of magnitude matching. *Perception & Psychophysics*, **49**, 31-37.
47. Marks, L.E., Algom, D., & Benoit, J.-P. (1991). Dichotic summation of loudness of narrowly-spaced components. *Bulletin of the Psychonomic Society*, **29**, 62-64.
48. Algom, D., Marks, L.E., & Wiesenfeld, D. (1991). Tapping the social psychology of psychophysical experiments: Mode of responding does not alter statistical properties of magnitude estimates. *Bulletin of the Psychonomic Society*, **29**, 226-228.
49. Marks, L.E., & Warner, E. (1991). Slippery context effect and critical bands. *Journal of Experimental Psychology: Human Perception and Performance*, **17**, 986-996.
50. Rankin, K.M., & Marks, L.E. (1991). Differential context effects in taste perception. *Chemical Senses*, 16, 617-629.
51. Marks, L.E. (1992). The slippery context effect in psychophysics: Intensive, extensive, and qualitative continua. *Perception & Psychophysics*, **51**, 187-198.
52. Melara, R.D., Marks, L.E., & Lesko, K.E. (1992). Optional processes in similarity judgments. *Perception & Psychophysics*, **51**, 123-133.
53. Marks, L.E. (1992). The contingency of perceptual processing: Context modifies equal-loudness relations. *Psychological Science*, **3**, 285-291.
54. Rankin, K.M., & Marks, L.E. (1992). Effects of context on sweet and bitter tastes: Unrelated to sensitivity to PROP (6-n-propylthiouracil). *Perception & Psychophysics*, **52**, 479-486.
55. Marks, L.E., Borg, G., & Westerlund, J. (1992). Differences in taste perception assessed by magnitude matching and by category-ratio scaling. *Chemical Senses*, **17**, 493-506.
56. Marks, L.E. (1993). Contextual processing of multidimensional and unidimensional auditory stimuli. *Journal of Experimental Psychology: Human Perception and* *Performance*, **19**, 227-249.
57. Melara, R.D., Potts, B.C., & Marks, L.E. (1993). Primacy of dimensions in color perception. *Journal of Experimental Psychology: Human Perception and Performance*, **19**, 1082-1104.
58. Melara, R.D., Potts, B.C., & Marks, L.E. (1993). Early-holistic processing or dimensional similarity? *Journal of Experimental Psychology: Human Perception and Performance*, **19**, 1114-1120.
59. Algom, D., Marks, L.E., & Cain, W.S. (1993). Memory psychophysics for chemosensation. *Chemical Senses*, **18**, 151-160.
60. Marks, L.E. (1994). “Recalibrating” the auditory system: The perception of loudness. *Journal of Experimental Psychology: Human Perception and Performance*, **20**, 382-396.
61. Ben-Artzi, E., & Marks, L.E. (1995). Visual-auditory interaction in speeded classification: Role of stimulus difference. *Perception & Psychophysics*, **57**, 1151-1162.
62. Marks, L.E., Galanter, E., & Baird, J.C. (1995). Binaural summation after learning psychophysical functions for loudness. *Perception & Psychophysics*, **57**, 1209-1216.
63. Marks, L.E. (1996). On perceptual metaphors. *Metaphor and Symbolic Activity*, **11**, 39-66.
64. Marks, L.E. (1996). Recalibrating the perception of loudness: Interaural transfer. *Journal of the Acoustical Society of America*, **100**, 473-480.
65. Armstrong, L., & Marks, L.E. (1997). Stimulus context, perceived length, and the horizontal-vertical illusion. *Perception & Psychophysics*, **59**, 1200-1213.
66. Potts, B.C., Melara, R.D., & Marks, L.E. (1998). Circle size and diameter tilt: A new look at integrality and separability. *Perception & Psychophysics*, **60**, 101-112. (PMID: 9503915)
67. Marks, L.E., & Wheeler, M.E. (1998). Attention and the detectability of weak taste stimuli. *Chemical Senses*, **23**, 19-29. (PMID: 9530966)
68. Stevens, J.C., Cruz, L.A., Marks, L.E., & Lakatos, S. (1998). A multimodal assessment of sensory thresholds in aging. *Journal of Gerontology: Psychological Sciences*, **53B**, P263-P272. (PMID: 9679518)
69. Lakatos, S., & Marks, L.E. (1998). Haptic underestimation of angular extent. *Perception*, **27**, 737-754. (PMID: 10197190)
70. Ben-Artzi, E., & Marks, L.E. (1999). Processing linguistic and perceptual dimensions of speech: Interactions in speeded classification. *Journal of Experimental Psychology: Human Perception and Performance*, **25**, 1-17. (PMID: 10385980)
71. Lakatos, S., & Marks, L.E. (1999). Haptic form perception: Relative salience of local and global features. *Perception & Psychophysics*, **61**, 895-908. (PMID: 10499002)
72. Armstrong, L., & Marks, L.E. (1999) Haptic perception of linear extent. *Perception & Psychophysics*, **61**, 1211-1226. (PMID: 10497438)
73. Hettinger, T.P., Gent, J.F., Marks, L.E., & Frank, M. (1999). A confusion matrix for the study of taste perception. *Perception & Psychophysics*, **61**, 1510-1521. (PMID: 10598466)
74. Martino, G., & Marks, L.E. (1999). Perceptual and linguistic interactions in speeded classification: Tests of the semantic coding hypothesis. *Perception*, **28**, 903-923. (PMID: 10664781)
75. Gent, J.F., Hettinger, T.P., Frank, M.E., & Marks, L.E. (1999). Taste confusions following gymnemic acid rinse. *Chemical Senses*, 24, 393-404. (PMID: 10480675)
76. Martino, G., & Marks, L.E. (2000). Cross-modal interaction between vision and touch: The role of synesthetic correspondence. *Perception*, **29**, 745-754. (PMID: 11040956)
77. Rankin, K.M., & Marks, L.E. (2000). Chemosensory context effects: Role of perceived similarity and neural commonality. *Chemical Senses*, **25**, 747-759. (PMID: 11114153)
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2. Morrow, K, Veldhuizen, M.G., Xie, Y., & Marks, L.E. Perceiving flavors: Sensory qualities or flavor stimuli?
3. Mulvenna, C.M., & Marks, L.E. (under revision). Audio-visual correspondences: A probabilistic approach. *Attention, Perception, & Psychophysics*

**IN PREPARATION**

1. Marks, L.E. Detecting and identifying taste (and flavor) stimuli. 1. A decision-theoretic framework.
2. Marks, L.E., Shepard, T.G., Veldhuizen, M.G. Detecting and identifying taste (and flavor) stimuli. 2. Identifying gustatory stimuli below their detection threshold.
3. Kizilarmut, C., Morrow, K., & Marks, L.E. Perception of complex flavors is not (wholly) analytic
4. Xie, Y., Morrow, K., Veldhuizen, M.G., & Marks, L.E. Gustatory-olfactory flavor mixtures: How flavor qualities predict hedonics.
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P109. Martino, G., & Marks, L.E. (1999). Cross-modal interaction between vision and touch. *Fortieth Annual Meeting of the Psychonomic Society,* Los Angeles, CA.

P110. Marks, L.E. (2000). Psychophysical scaling and individual differences. *XXVIII International Congress of Psychology*, Stockholm, Sweden.

P111. Marks, L.E. (2000). Similarity within and across sensory modalities. *XXVIII International Congress of Psychology*, Stockholm, Sweden.

P112. Pollock, R.A., Marks, L.E., Carter, A.S., & Amir, N. (2000). Anxiety sensitivity and auditory perception of heart beat. Symposium presentation: *34th Meeting of the Association for the Advancement of Behavior Therapy*, New Orleans, LA.

P113. Pollock, R.A., Marks, L.E., Carter, A.S., & Amir, N. (2001). The role of anxiety sensitivity and panic symptoms on the detection of normal and abnormal heartbeat sounds*. World Congress of Behavioral and Cognitive Therapies*, Vancouver, Canada.

P114. Pollock, R.A., Marks, L.E., & Carter, A.S. (2001). The anxiety-sensitive individual who ‘cried wolf’: An ROC analysis of response to cardiac sounds. *35th Annual AABT Annual Convention*, Philadelphia.

P115. Marks, L.E. (2001). Recalibration of loudness: Sensory vs. decisional processes. Symposium, Loudness. *Seventeenth Annual Meeting of the International Society for Psychophysics*, Leipzig, Germany.

P116. Odgaard, E., Arieh, Y., & Marks, L.E. (2001). Cross-modally induced response bias in brightness judgments. *Forty-second Annual Meeting of the Psychonomic Society,* Orlando, FL.

P117. Jiang, Y., Marks, L.E., & Chun, M. (2001). Visual marking: Selective attention to asynchronous temporal groups. *Forty-second Annual Meeting of the Psychonomic Society,* Orlando, FL.

P118. Ashkenazi, A., & Marks, L.E. (2001). Attention in flavor perception. *Forty-second Annual Meeting of the Psychonomic Society,* Orlando, FL.

P119. Arieh, Y., Jiang., Y., & Marks, L.E. (2001). Context effects in visual length perception: Evidence for preattentive processing. *Forty-second Annual Meeting of the Psychonomic Society,* Orlando, FL.

P120. Marks, L.E. (2002). Introduction. Symposium, Chemosensation: Psychophysical Measurement in the 21st Century. *Twenty-fourth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P121. Ashkenazi, A., & Marks, L. E. (2002). Attention to gustatory and olfactory flavors. *Twenty-fourth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P122. Marks, L.E., Lakatos, S., & Ben-Artzi, E. (2002). Auditory-visual interactions in sensory discrimination. *Third Meeting of the International Multisensory Research Forum*. Geneva, Switzerland.

P123. Marks, L.E. (2002). Psychophysical scaling of unidimensional and multidimensional domains: Validity, sensitivity, reliability. *Consensus Meeting on Auditory Perceptual Assessment of Voice Quality, American Speech and Hearing Association,* Pittsburgh, PA.

P124. Marks, L.E. (2002). Multimodal psychophysics. Opening address*: Eighteenth Annual Meeting of the International Society for Psychophysics*, Rio de Janeiro, Brazil.

P125. Arieh, Y., Odgaard, E.C., & Marks, L.E. (2002). Cross-modal interaction between light and sound: An accuracy-speed analysis. *Forty-third Annual Meeting of the Psychonomic Society*, Kansas City, MO.

P126. Ashkenazi, A., Buckley, J., D’Alessandro, T., DiRubba, A., Fritz, J., Goodman, R., & Marks, L. E. (2003). A (T)emporal (A)utomatic (S)ystem for (T)aste (E)xperiments. *Twenty-fifth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P127. Ross, D.A., Gore, J.C., & Marks, L.E. (2003). Evidence for distinct types of “perfect pitch.” *One Hundred and Forty-fifth Meeting of the Acoustical Society of America*, Nashville, TN.

P128. Mailloux, J., Arieh, Y., & Marks, L. E. (2003). Loudness enhancement and recalibration in hearing and touch. *Fourth Meeting of the International Multisensory Research Forum*, Hamilton, Ontario, Canada.

P129. Odgaard, E.C., Arieh, Y., & Marks, L.E. (2003). Asymmetric interactions between light and sound: Response biases vs. sensory enhancement. *Fourth Meeting of the International Multisensory Research Forum*, Hamilton, Ontario, Canada.

P130. Ashkenazi, A., & Marks, L.E. (2003). Flavor perception: Independence of gustatory and olfactory processing*. Fourth Meeting of the International Multisensory Research Forum*, Hamilton, Ontario, Canada.

P131. Ashkenazi, A., Arieh, Y., & Marks, L.E. (2003). Cross modal interaction between vision and audition: Role of semantic and spatial processes. *Fourth Meeting of the International Multisensory Research Forum*, Hamilton, Ontario, Canada.

P132. Arieh, Y., & Marks, L.E. (2004). Loudness recalibration at short ISI: A closer look. *One Hundred and Forty-seventh Meeting of the Acoustical Society of America*. New York, NY.

P133. Ashkenazi, A., Gent, J.F., Marks, L.E., & Frank, M.E. (2004). Sucrose and NaCl self-adaptation using TASTE. *Twenty-sixth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P134. Ashkenazi, A., & Marks, L.E. (2004). Object-based attention in the visual field. *Twentieth Annual Meeting of the International Society for Psychophysics*, Coimbra, Portugal.

P135. Schoen, K.L., Marks, L.E., & Green, B.G. (2004). Temperature perception throughout the hand. *Thirty-fourth Annual Meeting of the Society for Neuroscience*, San Diego, CA.

P136. Marks, L.E. (2005). Discussant, Symposium: Synesthesia and Perception. *Annual Meeting of the College Art Association*.Atlanta, GA.

P137. Ross, D.A., & Marks, L.E. (2005). Absolute pitch confers an enhanced ability to distinguish between properly and improperly tuned stimuli. *The Neurosciences and Music. II. From Perception to Performance*. Leipzig, Germany.

P138. Ross, D.A., & Marks, L.E. (2005). Absolute pitch confers enhanced memory for musical sequences. *The Neurosciences and Music. II. From Perception to Performance*. Leipzig, Germany.

P139. Ashkenazi, A., Marks, L.E., Elgart, B., & Frank, M. (2005). Adaptation and recovery-from-adaptation to sucrose and sodium chloride. *Twenty-seventh Annual Meeting of the Association for Chemoreception Sciences*, Sarasota, FL.

P140. Marks, L.E. (2005). Synesthesia: Brain, perception, and language. *Reboot Your Senses: Colors, Perception, Games and the Brain*. Eyebeam, New York, NY.

P141. Marks, L.E., & Arieh, Y. (2005). Differential effects of stimulus context in sensory processing. *International Workshop on Psychology of Perception, Sensory Evaluation and Context.* Paris, France.

P142. Kelly, K., Arieh, Y., & Marks, L.E. (2005). Inducing loudness reduction affects auditory lateralization. *Twenty-first Annual Meeting of the International Society for Psychophysics*. Traverse City, MI.

P143. Wang, M.-F., Marks, L.E., Gent, J.F., & Frank, M.E. (2006). Specific effects of chlorhexidine on taste identification. Adaptation and recovery-from-adaptation to sucrose and sodium chloride. *Twenty-eighth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P144. Elgart, G., & Marks, L.E. (2006). Detection of weak gustatory-olfactory mixtures. *Twenty-eighth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P145. Wang, M.-F., & Marks, L.E. (2006). Effects of spatial attention on tactile processing: A speed-accuracy analysis. *Twenty-second Annual Meeting of the International Society for Psychophysics*. St. Albans, England.

P146. Marks, L.E., Elgart, B.Z., & Ashkenazi, A. (2006). Detecting flavorants: Multisensory processes in chemosensation. *Twenty-second Annual Meeting of the International Society for Psychophysics*. St. Albans, England.

P147. Marks, L.E. (2006). S.S. Stevens’s ‘lost’ paper of 1939: “On the problem of scales for the measurement of psychological magnitudes.” *Twenty-second Annual Meeting of the International Society for Psychophysics*. St. Albans, England.

P148. Marks, L.E., Burger, K., & Chakwin, E.M. (2007). Human flavor perception: Application of information integration theory. *Applications of Functional Measurement in Psychology*, Padova, Italy.

P149. Burger, K., Veldhuizen, M.G., Wang, M.-F., & Marks, L.E. (2007). Flavor perception: Response time measures of processing of gustatory-olfactory mixtures. *Twenty-ninth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P150. Marks, L.E., Burger, K., & Chakwin, E.M. (2007). Flavor perception: Effects of context on perceived intensity of gustatory-olfactory mixtures. *Twenty-ninth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P151. Frank, M., Burger, K., Wang, M.-F., & Marks, L.E. (2007). Adaptation to sucrose and NaCl tracked discretely or continuously. *Twenty-ninth Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P152. Arieh, Y., Shepherd, M.R., Burger, K., & Marks, L.E. (2007). Combining information about pitch and position: Evidence for independent processing. *Nineteenth Annual Meeting of the Association for Psychological Science (APS),* Washington, DC.

P153. Eitan, Z., Schupack, A., & Marks, L.E. (2008). Louder is higher: Cross-modal interaction of loudness change and vertical motion in speeded classification. *Tenth International Conference on Music Perception and Cognition*, Sapporo, Japan.

P154. Marks, L.E. (2008). Does induced loudness reduction explain contextual effects in loudness? *Acoustics 08*, Paris, France.

P155. Marks, L.E., Burger, K., Shepard, T.G., & Wang, M.-F. (2008). Effects of context on perceived intensity of flavor mixtures near threshold. *Thirtieth Annual Meeting of the Association for Chemoreception Sciences and Fifteenth Meeting of the International Society for Olfaction and Taste*. San Francisco, CA.

P156. Shepard, T.G., Veldhuizen, M.G., Wang, M.-F., & Marks, L.E. (2008). Response-time measures of gustatory-olfactory flavor integration. *Thirtieth Annual Meeting of the Association for Chemoreception Sciences and Fifteenth Meeting of the International Society for Olfaction and Taste*. San Francisco, CA.

P157. Shepard, T.G., Wang, M.-F., Veldhuizen, M.G., & Marks, L.E. (2009). Recognizing taste stimuli below the detection threshold. *Thirty-first Annual Meeting of the Association for Chemoreception Sciences*. Sarasota, FL.

P158. Marks, L.E. (2009). Keynote address: Synaesthesia across the spectrum. *Third International Congress on Synesthesia, Science and Art*. Granada, Spain.

P159. Marks, L.E. (2009). Gustatory-olfactory integration in human flavor perception. Symposium: Flavor Perception. *Tenth International Multisensory Research Forum*, New York, NY.

P160. Shepard, T.G., Veldhuizen, M.G., Shavit, A.Y., & Marks, L.E. (2010). Flavor integration of MSG and citral: Response time measurement. *Thirty-second Annual Meeting of the Association for Chemoreception Sciences*. St. Pete Beach, FL.

P161. Shavit, A.Y., Shepard, T.G., Veldhuizen, M.G., & Marks, L.E. (2010). Gustatory-olfactory interactions in flavor perception? *Thirty-second Annual Meeting of the Association for Chemoreception Sciences*. St. Pete Beach, FL.

P162. Marks, L.E., Shepard, T.G., Shavit, A.Y., & Veldhuizen, M.G. (2010). How does context affect taste intensity? *Thirty-second Annual Meeting of the Association for Chemoreception Sciences*. St. Pete Beach, FL.

P163. Marks, L.E. (2010). Keynote address: Multisensory integration: Perceptual and decisional processes. *Great Expectations: New Directions in How the Brain Shapes Our Tastes*. Vlaardingen, The Netherlands.

P164. Marks, L.E. (2010). Object search and recognition: Some thoughts on auditory-visual processing. *DARPA Acoustic/Visual Sensory Integration Meeting*, Annapolis, MD. (telecom presentation)

P165. Shavit, A.Y., Shepard, T.G., Veldhuizen, M.G., & Marks, L.E. (2011). Color facilitation in speeded gustatory detection. *Thirty-third Annual Meeting of the Association for Chemoreception Sciences*. St. Pete Beach, FL.

P166. Shepard, T.G., Shavit, A.Y., Veldhuizen, M.G., & Marks, L.E. (2011). Identification of gustatory-olfactory flavors: Effects of stimulus context. *Thirty-third Annual Meeting of the Association for Chemoreception Sciences*. St. Pete Beach, FL.

P167. Marks, L.E., Veldhuizen, M.G., Shepard, T.G., & Shavit, A.Y. (2011). Can probability summation account for gustatory-olfactory flavor-mixture detection? *Thirty-third Annual Meeting of the Association for Chemoreception Sciences*. St. Pete Beach, FL.

P168. Eitan, Z., Schupak, A., Gotler, A., & Marks, L.E. (2011). Lower pitch is larger, yet falling pitches shrink: Interaction of pitch and size change in speeded discrimination. *Fechner Day 2011: Twenty-seventh Annual Meeting of the International Society for Psychophysics*. Herzliya, Israel.

P169. Shavit, A.Y., Veldhuizen, M.G., Shepard, T.G., & Marks, L.E. (2012). Does color modify the identification of associated flavors? *Thirty-fourth Annual Meeting of the Association for Chemoreception Sciences*. Huntington Beach, CA.

P170. Eitan, Z., & Marks, L.E. (2012). Garner's paradigm and audiovisual correspondence in dynamic stimuli: Pitch and vertical direction. *Thirteenth International Multisensory Research Forum*, Oxford, UK.

P171. Marks, L.E., Brewer, J.M., Shavit, A.Y., Shepard, T.G., & Veldhuizen, M.G. (2012). Identification of gustatory-olfactory flavors: Effect of linguistic labeling. *XVI International Symposium on Olfaction and Taste*. Stockholm, Sweden.

P172. Marks, L.E. (2013). When colorless green ideas sleep furiously: Metaphor in perception and language. Symposium in Honor of George A. Miller. *Eastern Psychological Association*, New York, NY.

P173. Marks, L.E., & Mulvenna, C.M. (2013). Perceptual correspondences. Symposium on Sound Symbolism and Cross-Modal Correspondence. *Experimental Psychology Society*, Lancaster, UK.

P174. Marks, L.E. (2014). Taste detection and recognition: A decision-theoretic framework. *Thirty-sixth Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P175. Murphy, E., Parikh, R., Veldhuizen, M.G., & Marks, L.E. (2014). Flavor identification and intensity: Effects of context. *Thirty-sixth Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P176. Marks, L.E. (2015). Flavor detection and identification: A decision-theoretic framework. *Thirty-seventh Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P177. Siddique, A.H., Rosenthal, S., Veldhuizen, M.G., & Marks, L.E. (2015). Effects of lemon flavor on sweet and sour tastes, and vice versa. *Thirty-seventh Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P178. Marks, L.E., & Mulvenna, C.M. (2016). Synesthesia: Perception, language, digital art. *Symposium on Digital Synesthesia*. Universität für Angewandte Kunst, Vienna, Austria.

P179. Siddique, A.H., Veldhuizen, M.G., & Marks, L.E. (2016). Effects of linguistic labeling on identification of gustatory–olfactory (acid-lemon) flavor mixtures. *Thirty-eighth Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P180. Kizilarmut C., Morrow, K., & Marks, L.E. (2017). Perception of complex flavors is not (wholly) analytic. *Second Biennial International Convention of Psychological Science*, Vienna, Austria.

P181. Marks, L.E. (2017). Multisensory flavor perception: Applying a decision-theoretic framework. *Thirty-ninth Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P182. Morrow, K., Xie, Y., Veldhuizen, M.G., & Marks, L.E. (2017).How do people quantify flavors? Judging flavor qualities versus judging flavor stimuli. *Thirty-ninth Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.

P183. Xie, Y., Morrow, K., Veldhuizen, M.G., & Marks, L.E. (2017). Masking of bitterness and sweetness by tea flavor. *Thirty-ninth Annual Meeting of the Association for Chemoreception Sciences*. Bonita Springs, FL.