Curriculum Vitae

Leslie Welch
Associate Professor
Department of Psychology
Brown University

EDUCATION:	DEGREE	YEAR	FIELD
University of California Berkeley, California	A.B.	1982	Psychology
University of California Berkeley, California	Ph.D.	1990	Physiological Optics

Dissertation topic: Visual motion perception

PROFESSIONAL EXPERIENCE:

1982 - 1983	Research Assistant for Dr. Brian Brown, Smith-Kettlewell Eye Research Institute, San Francisco, CA
1983 - 1984	Research Assistant for Dr. Gunilla Haegerstrom-Portnoy, Smith-Kettlewell Eye Research Institute, San Francisco, CA
1982 - 1990	Research Assistant for Dr. Suzanne P. McKee, Smith-Kettlewell Eye Research Institute, San Francisco, CA
1985 - 1990	Graduate student and teaching assistant, School of Optometry, University of California, Berkeley
1990 - 1992	Postdoctoral Fellow with Dr. Donald I.A. MacLeod, Department of Psychology, University of California, San Diego
1992 - 1998	Assistant Professor, Department of Psychology, Brown University
1998 - present	Associate Professor, Department of Psychology, Brown University

REFEREED JOURNAL ARTICLES:

1) McKee, S.P. and Welch, L. (1985) Sequential recruitment in the discrimination of velocity. Journal of the Optical Society of America A, **2**, 243-251.
2) Welch, L. and McKee, S.P. (1985) Colliding targets: Evidence for spatial localization within the motion system. Vision Research, **25**, 1901-1910.
3) Brown, B., Brabyn, L., Welch, L., Haegerstrom-Portnoy, G. and Colenbrander, A. (1986) The contribution of vision variables to mobility in age related maculopathy patients. American Journal of Optometry and Physiological Optics, **63**, 733-739.
4) Welch, L. (1989) The perception of moving plaids reveals two motion-processing stages. Nature, **337**, 734-736.
5) McKee, S.P. and Welch, L. (1989) Is there a constancy for velocity? Vision Research, **29**, 553-561.
6) McKee, S.P., Welch, L., Taylor, D.G. and Bowne, S.F. (1990) Finding the common bond: Stereoacuity and the other hyperacuities. Vision Research, **30**, 879-891.
7) Welch, L. and Bowne, S.F. (1990) Coherence determines speed discrimination. Perception, **19**, 425-435.
8) McKee, S.P. and Welch, L. (1992) The precision of size constancy. Vision Research, **32**, 1447-1460.
9) Carman, G.J. and Welch, L. (1992) Three-dimensional illusory contours and surfaces. Nature, **360** (6404), 585-587.
10) Carman, G.J. and Welch, L. (1993) Illusion and view stability-Reply to Redies and Watanabe. Nature, **363**, 120.
11) Matthews, N. and Welch, L. (1997) Velocity-dependent improvement in single dot direction discrimination. Perception and Psychophysics, **59** (1), 60-72.
12) Welch, L., MacLeod, D.I.A. and McKee, S.P. (1997) Motion interference: Perturbing perceived direction. Vision Research, **37**(19), 2725-2736.
13) Festa, E.K. and Welch, L. (1997) Recruitment mechanisms in speed and fine-direction discrimination tasks. Vision Research, **37**(22), 3129-3144.
14) Matthews, N. and Welch, L. (1997) The effect of inducer polarity and contrast on the perception of illusory figures. Perception, **26**, 1431-1443.
15) Vreven, D.L. and Welch, L. (2001) The absence of depth constancy in contour stereograms. Perception. **30** (6), 693-705.
16) Festa-Martino, E.K. and Welch, L. (2001) Motion capture depends on stimulus strength. Perception. **30** (4), 489-510.

ABSTRACTS:

1) McKee, S.P. and Welch, L. (1983) Sequential recruitment in velocity discrimination. in OSA Annual Meeting Technical Digest, (Optical Society of America, Washington, D.C.,1983), **6**, 20-21.

2) Welch, L. and McKee, S.P. (1984) Colliding targets: Localization of moving objects in space and time. in OSA Annual Meeting Technical Digest, (Optical Society of America, Washington, D.C., 1984), **7**, 118-119.
3) Welch, L., MacLeod, D.I.A. and McKee, S.P. (1985) Local interactions affecting direction and velocity of apparent motion. Investigative Ophthalmology and Visual Science Supplement, **26**, 189.
4) McKee, S.P. and Welch, L. (1986) Velocity constancy does not exist. Investigative Ophthalmology and Visual Science Supplement, **27**, 142.
5) Welch, L. and McKee, S.P. (1987) Small-scale mechanisms require more time. Investigative Ophthalmology and Visual Science Supplement, **28**, 356.
6) McKee, S.P., Welch, L. and Taylor, D.G. (1987) Stereoacuity unmasked: The meaning of stereoacuity distance functions. Investigative Ophthalmology and Visual Science Supplement, **28**, 138.
7) Welch, L. (1988) Speed discrimination and the aperture problem. Investigative Ophthalmology and Visual Science Supplement, **29**, 264.
8) Bowne, S.F. and Welch, L. (1988) Coherence determines speed discrimination of plaids. in OSA Annual Meeting Technical Digest, (Optical Society of America, Washington, D.C., 1988), **11**, 141.
9) Welch, L. and Bowne, S.F. (1989) Neural rules for combining signals from moving gratings. Investigative Ophthalmology and Visual Science Supplement, **30**, 75.
10) Welch, L. and McKee, S.P. (1990) Position judgments are corrected for disparity at large scales. Investigative Ophthalmology and Visual Science Supplement, **31**, 411.
11) Welch. L. and MacLeod, D.I.A. (1991) Motion mislocation. in OSA Annual Meeting Technical Digest, (Optical Society of America, Washington, D.C., 1991), **14**, 216-217.
12) Welch, L. and Smallman, H.S. (1992) Is there motion mislocation in depth? Investigative Ophthalmology and Visual Science Supplement, **33**, 1333.
13) Carman, G.J., Welch, L., and Albright, T.D. (1992) Relationship of motion and stereo cues to relative depth. Investigative Ophthalmology and Visual Science Supplement, **33**, 1333.
14) Carman, G.J. and Welch, L. (1993) Position, orientation, and shape of real and illusory three-dimensional surfaces. Investigative Ophthalmology and Visual Science Supplement, **34**, 1131.
15) Welch, L. and Reichel, F.D. (1994) Three-dimensional illusory solids. Investigative Ophthalmology and Visual Science Supplement, **35**, 1627.
16) Reichel, F.D. and Welch, L. (1995) Illusory solids from stereopsis. Investigative Ophthalmology and Visual Science Supplement, **36**, S368.
17) Matthews, N. and Welch, L. (1995) Perceptual learning on direction-of-motion tasks. Investigative Ophthalmology and Visual Science Supplement, **36**, S15.
18) Festa, E.K. and Welch, L. (1995) Multiple recruitment mechanisms in motion discrimination. Investigative Ophthalmology and Visual Science Supplement, **36**, S636.
19) Festa, E.K. and Welch, L. (1996) Apparent direction does not depend on

transparency / non-transparency. Investigative Ophthalmology and Visual Science Supplement , **37**, S739.

20) Welch, L. and Tolstoshev, N.E. (1996) Is shearing motion detected by spatial-frequency tuned mechanisms? Investigative Ophthalmology and Visual Science Supplement, **37**, S916.

21) Ascher, D., Welch, L. and Festa, E.K. (1996) Adaptation to stationary gratings results in an increase in apparent speed of moving gratings. Investigative Ophthalmology and Visual Science Supplement, **37**, S916.

22) Matthews, N. and Welch, L. (1996) The effect of contrast and polarity on illusory figures. Investigative Ophthalmology and Visual Science Supplement, **37**, S174.

23) Reichel, F.D., Welch, L. and Imber, M.L. (1996) Stereo-curvature discrimination with and without illusory contours. Investigative Ophthalmology and Visual Science Supplement, **37**, S287.

24) Ascher, D., Welch, L. and Grzywacz, N.M. (1996) Integration across spatial frequency channels in speed discrimination. Society for Neuroscience, 26th Annual Meeting, #349.6.

25) Vreven, D.L., Welch, L. and Reichel, F.D. (1997) Perceived surface curvature depends on both curvature disparity and perceived distance. Investigative Ophthalmology and Visual Science Supplement, **38**, S902.

26) Jackson, C. and Welch, L. (1997) How many temporal frequency filters are used in discriminating speeds? Investigative Ophthalmology and Visual Science Supplement, **38**, S377.

27) Ascher, D. and Welch, L. (1997) Integration in speed discrimination across wide ranges of spatial frequencies and orientations. Investigative Ophthalmology and Visual Science Supplement, **38**, S376.

28) Festa, E.K. and Welch, L. (1997) Motion capture depends on signal strength. Investigative Ophthalmology and Visual Science Supplement, **38**, S74.

29) Matthews, N. and Welch, L. (1997) Illusory contours from luminance, stereo and motion defined edges. Investigative Ophthalmology and Visual Science Supplement, **38**, S203.

30) Festa, E.K. and Welch, L. (1998) Perceived strength of compound stimulus depends on component signal strength. Eastern Psychological Association meeting.

31) Vreven, D. and Welch, L. (1998) Disparity interpolation and stereoscopic shape distortions. Eastern Psychological Association meeting.

32) Jackson, C. D., and Welch, L. (1998) Temporal frequency channels and speed perception. Paper presented at the annual meeting of the Optical Society of America, Baltimore, MD.

33) Festa, E.K. and Welch, L. (1998) Perceived speed of motion metamer depends on component signal strength. Investigative Ophthalmology and Visual Science Supplement, **39**, S426.

34) Vreven, D. and Welch, L. (1998) Perceived depth in curved stereoscopic surfaces. Investigative Ophthalmology and Visual Science Supplement, **39**, S670, #3088.

35) Ascher, D. and Welch, L. (1998) Contrast can affect speed discrimination performance. Investigative Ophthalmology and Visual Science Supplement, **39**, S1078, #4987.
36) Vreven, D. and Welch, L. (1999) Structure from stereopsis: surface interpolation. Investigative Ophthalmology and Visual Science Supplement, **40**, S810, #4268.
37) Matthews, N. and Welch, L. (1999) Illusory contours in colored "X" stereograms. Investigative Ophthalmology and Visual Science Supplement, **40**, S808, #4262.
38) Vreven, D. and Welch, L. (1999) The "Pillow Effect" from interpolated disparity. Eastern Psychological Association Vision/Attention mini-conference, **70**, 23.
39) Welch, L. and Middleton, J.A. (2000) Integration characteristics for temporal frequency discrimination. Investigative Ophthalmology and Visual Science Supplement, **41**, S233, #1222.
40) Jackson, C.D. and Welch, L. (2000) The effects of mask duration on speed perception. Investigative Ophthalmology and Visual Science Supplement, **41**, S794, #4210.
41) Jackson, C.D. and Welch, L. (2000) The effects of double masking on speed perception. Paper presented at the annual meeting of the Optical Society of America, Providence, RI.
42) Welch, L. and Vaitsou, C. (2001) Are outlines part of 3D object category representations? Investigative Ophthalmology and Visual Science Supplement, **42**, S732, #3929.
43) Welch, L. and Boachie, Y. (& Silverman, D.) (2003) Learning a novel 3D object category. Poster presented at the annual meeting of Vision Sciences Society.
44) Silverman, D.J. and Welch, L. (2003) Does chunking by color facilitate category learning? Poster presented at the annual meeting of Vision Sciences Society.
45) Silverman, D.J. and Welch, L. (2004) Category learning in the visual processing stream. Paper presented at annual meeting of Vision Sciences Society.
46) Welch, L. and Silverman, D.J. (2004) Category learning as an example of perceptual learning. Paper presented at the European Conference on Visual Perception, Budapest, Hungary.

THESES SUPERVISED:

1) Nicholas Tolstoshev, Psychology Honors student, 1995
2) Nestor Matthews, Ph.D. Psychology, 1996
3) Michelle Imber, Neurosciences Honors student, 1996
4) David Ascher, Ph.D. Cognitive Sciences, 1997
5) Elena Festa-Martino, Ph.D. Psychology, 1997
6) Dawn Vreven, Ph.D. Psychology, 1998
7) Joel Middleton, M.S. Psychology, 1998
8) Danah Boyd, Computer Sciences Honors student, 1999
9) Chloe Vaitsou, Psychology Honors student, 1999
10) Yaw Boachie, Human Biology Honors student, 2000

11) Deborah Silverman, Psychology Honors student, 2003
12) Martha Donovan, Psychology Honors student, 2003
13) Deborah Silverman, M.S. Psychology, 2004