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**NOVEMBER 30, 2011**

**EDUCATION:**

- Ph.D. in Psychology: Cognition, Perception, and Cognitive Neuroscience, 2006  
University of California, Santa Barbara
- M.A. in Psychology: Cognition, Perception, and Cognitive Neuroscience, 2004  
University of California, Santa Barbara
- B.A. in Psychology, 1998  
University of California, Los Angeles

**PROFESSIONAL EXPERIENCE:**

- Assistant professor, Iowa State University, 2009-present  
Department of Psychology and member of the Human Computer Interaction program
- Postdoctoral research associate, Vanderbilt University, 2007-2009  
Advisor: Dr. Timothy McNamara

**PEER-REVIEWED JOURNAL ARTICLES (\* INDICATES STUDENT CO-AUTHOR):**

24. \*Pollock, B., \*Burton, M., **Kelly, J.W.**, Gilbert, S. & Winer, E. (accepted pending minor revision). The right view from the wrong location: Depth perception in stereoscopic multi-user virtual environments. *IEEE Transactions on Visualization & Computer Graphics*.
23. Carpenter, S.K. & **Kelly, J.W.** (in press). Tests enhance retention and transfer of spatial learning. *Psychonomic Bulletin & Review*.
22. **Kelly, J.W.**, Avraamides, M.N. & Giudice, N.A. (in press). Haptic experiences influence visually-acquired memories: Reference frames during multimodal spatial learning. *Psychonomic Bulletin & Review*.
21. **Kelly, J.W.** (2011). Head for the hills: The influence of environmental slant on spatial memory organization. *Psychonomic Bulletin & Review*, 18, 774-780.
20. **Kelly, J.W.** & Avraamides, M.N. (2011). Cross-sensory transfer of reference frames in spatial memory. *Cognition*, 118, 444-450.
19. Avraamides, M.N. & **Kelly, J.W.** (2010). Multiple systems of spatial memory: Evidence from described scenes. *Journal of Experimental Psychology: Learning, Memory & Cognition*, 36(3), 635-645.
18. **Kelly, J.W.** & McNamara, T.P. (2010). Reference frames during the acquisition and development of spatial memories. *Cognition*, 116(3), 409-420.

17. **Kelly, J.W.** & McNamara, T.P. (2009). Facilitated pointing to remembered objects in front: Evidence for egocentric retrieval or spatial priming? *Psychonomic Bulletin & Review*, 16(2), 295-300.
16. **Kelly, J.W.**, McNamara, T.P., Bodenheimer, B., Carr, T.H. & Rieser, J.J. (2009). Individual differences in using geometric and featural cues to maintain spatial orientation: Cue quantity and cue ambiguity are more important than cue type. *Psychonomic Bulletin & Review*, 16(1), 176-181.
15. Avraamides, M.N. & **Kelly, J.W.** (2008). Multiple systems for spatial memory and action. *Cognitive Processing*, 9, 93-106.
14. **Kelly, J.W.** & McNamara, T.P. (2008a). Response mode differences in perspective taking: Differences in representation or differences in retrieval? *Memory & Cognition*, 36(4), 863-872.
13. **Kelly, J.W.** & McNamara, T.P. (2008b). Spatial memories of virtual environments: How egocentric experience, intrinsic structure, and extrinsic structure interact. *Psychonomic Bulletin & Review*, 15(2), 322-327.
12. **Kelly, J.W.**, McNamara, T.P., Bodenheimer, B., Carr, T.H. & Rieser, J.J. (2008). The shape of human navigation: How environmental geometry is used in maintenance of spatial orientation. *Cognition*, 109, 281-286.
11. **Kelly, J.W.**, Riecke, B., Loomis, J.M. & Beall, A.C. (2008). Visual control of posture in real and virtual environments. *Perception & Psychophysics*, 70(1), 158-165.
10. Loomis, J.M., **Kelly, J.W.**, Pusch, M., Bailenson, J.N. & Beall, A.C. (2008). Psychophysics of perceiving eye-gaze and head direction with peripheral vision: Implications for the dynamics of eye-gaze behavior. *Perception*, 37(9), 1443-1457.
9. **Kelly, J.W.**, Avraamides, M.N. & Loomis, J.M. (2007). Sensorimotor alignment effects in the learning environment and in novel environments. *Journal of Experimental Psychology: Learning, Memory & Cognition*, 33(6), 1092-1107.
8. Macuga, K.L., Beall, A.C., **Kelly, J.W.**, Smith, R. & Loomis, J.M. (2007). Changing lanes: Inertial cues and explicit path information facilitate steering performance when visual feedback is removed. *Experimental Brain Research*, 178(2), 141-160.
7. Zahorik, P. & **Kelly, J.W.** (2007). Accurate vocal compensation for sound intensity loss with increasing distance in natural environments. *Journal of the Acoustical Society of America*, 122(5), EL143-EL150.
6. **Kelly, J.W.**, Loomis, J.M., Beall, A.C., Smith, R.S. & Macuga, K.L. (2006). Simultaneous measurement of steering performance and perceived heading on a curving path. *ACM: Transactions on Applied Perception*, 3(2), 83-94.
5. Loomis, J.M., Beall, A.C., Macuga, K.L., **Kelly, J.W.** & Smith, R. (2006). Visual control of action without retinal optic flow. *Psychological Science*, 17(3), 214-221.
4. Macuga, K.L., Loomis, J.M., Beall, A.C. & **Kelly, J.W.** (2006). Perception of heading without retinal optic flow. *Perception & Psychophysics*, 68(5), 872-878.
3. **Kelly, J.W.**, Loomis, J.M. & Beall, A.C. (2005). The importance of perceived relative motion in the control of posture. *Experimental Brain Research*, 161(3), 285-292.
2. **Kelly, J.W.**, Loomis, J.M. & Beall, A.C. (2004). Judgments of exocentric direction in large-scale space. *Perception*, 33(4), 443-454.

1. **Kelly, J.W.**, Beall, A.C. & Loomis, J.M. (2004). Perception of shared visual space: Establishing common ground in real and virtual environments. *Presence: Teleoperators and Virtual Environments*, 13(4), 442-450.

**PEER-REVIEWED CHAPTERS AND CONFERENCE PROCEEDINGS (\* INDICATES STUDENT CO-AUTHOR):**

8. Gilbert, S.B., \*Boonsuck, W. & **Kelly, J.W.** (in press). Evaluation of desktop interface displays for 360-degree video. In B.E. Rogowitz, T.N. Pappas & H. de Ridder (Eds), *Human Vision and Electronic Imaging XVII, Proceedings of the SPIE*.
7. \*Pollock, B.B., **Kelly, J.W.**, \*Burton, M.B., Gilbert, S.B. & Winer, E. (in press). Diagnosing perceptual distortion present in group stereoscope viewing. In B.E. Rogowitz, T.N. Pappas & H. de Ridder (Eds), *Human Vision and Electronic Imaging XVII, Proceedings of the SPIE*.
6. \*Marsh, W.E., **Kelly, J.W.**, Dark, V.J., Oliver, J.H. (in press). The cognitive implications of virtual locomotion with a restricted field of view. In I.E. McDowall & M. Dolinsky (Eds), *The Engineering Reality of Virtual Reality 2012, Proceedings of the SPIE*.
5. \*Marsh, W.E., **Kelly, J.W.**, Dark, V.J. & Oliver, J. (2011). Assessing the use of cognitive resources in virtual reality. *Proceedings of HCI International, Orlando*.
4. **Kelly, J.W.**, Avraamides, M.N. & McNamara, T.P. (2010). Reference frames influence spatial memory development within and across sensory modalities. In C. Holscher, T.F. Shipley, M.O. Belardinelli, J.A. Bateman, N.S. Newcombe (Eds.), *Spatial Cognition VII: Lecture Notes in Artificial Intelligence* (pp. 222-233). Berlin: Springer.
3. **Kelly, J.W.** & McNamara, T.P. (2008). Spatial memory and spatial orientation. In C. Freksa (Ed.), *Spatial Cognition VI: Lecture Notes in Artificial Intelligence* (pp. 22-38). Berlin: Springer.
2. Avraamides, M.N. & **Kelly, J.W.** (2005). Imagined perspective-changing within and across novel environments. In C. Freksa, B. Nebel, M. Knauff, B. Krieg-Brückner (Eds.), *Spatial Cognition IV - Reasoning, Action, Interaction: Lecture Notes in Artificial Intelligence* (pp. 246-259). Berlin: Springer.
1. Loomis, J.M., Beall, A.C., **Kelly, J.W.** & Macuga, K.L. (2005). Importance of perceptual representation in the visual control of action. In B.E. Rogowitz, T.N. Pappas, S.J. Daly (Eds.), *Human Vision and Electronic Imaging X, Proceedings of the SPIE*, Volume 5666 (pp. 356-361).

**OTHER PUBLICATIONS:**

1. **Kelly, J.W.** & McNamara, T.P. (2009). Spatial memory. In B. Goldstein (Ed.), *Encyclopedia of Perception* (pp. 916-918). Thousand Oaks, CA: SAGE Publications.

**MANUSCRIPTS UNDER REVIEW (\* INDICATES STUDENT CO-AUTHOR):**

3. \*Boonsuk, W., Gilbert, S.B. & **Kelly, J.W.** (under review). The impact of three interfaces for 360-degree video on spatial cognition.
2. Greenauer, N., Mello, C., Avraamides, M.N. & **Kelly, J.W.** (under review). The influence of previous memories on the integration of spatial knowledge across experiences.
1. \*Marsh, W.E., \*Brown, J., \*Brown, R., \*Putnam, M., **Kelly, J.W.**, Dark, V.J. & Oliver, J. (under review). The cognitive implications of semi-natural virtual locomotion.

**CONFERENCE PRESENTATIONS (\* INDICATES STUDENT CO-AUTHOR):**

42. \*Pollock, B., \*Burton, M., **Kelly, J.W.**, Gilbert, S. & Winer, E. (2012). The right view from the wrong location: Depth perception in stereoscopic multi-user virtual environments. Talk to be presented at *IEEE VR 2012*, Irvine, CA.
41. Gilbert, S.B., \*Boonsuk, W. & **Kelly, J.W.** (2012). Evaluation of desktop interface displays for 360-degree video. Poster to be presented at *Human Vision and Electronic Imaging XVII, SPIE*, San Francisco, CA.
40. \*Pollock, B.B., **Kelly, J.W.**, \*Burton, M.B., Gilbert, S.B. & Winer, E. (2012). Diagnosing perceptual distortion present in group stereoscope viewing. Talk to be presented at *Human Vision and Electronic Imaging XVII, SPIE*, San Francisco, CA.
39. \*Marsh, W.E., **Kelly, J.W.**, Dark, V.J., Oliver, J.H. (2012). The cognitive implications of virtual locomotion with a restricted field of view. Talk to be presented at *The Engineering Reality of Virtual Reality 2012, SPIE*, San Francisco, CA.
38. Adamou, C.D., Avraamides, M.N. & **Kelly, J.W.** (2011). Integration of visuo-spatial information encoded from different viewpoints. Poster presented at the *European Congress of Psychology*, Istanbul, Turkey.
37. \*Boonsuk, W., Gilbert, S.B. & **Kelly, J.W.** (2011). Usability study for 360-degree view interfaces. Poster presented at the *8<sup>th</sup> Annual Emerging Technologies Conference*, Ames, IA.
36. \*Burton, M., Gilbert, S.B., **Kelly, J.W.**, \*Pollock, B. & \*Jose, S. (2011). Multiview image blending in the C6. Poster presented at the *8<sup>th</sup> Annual Emerging Technologies Conference*, Ames, IA.
35. Gilbert, S., **Kelly, J.W.**, \*Burton, M., \*Pollock, B., de la Cruz, J. (2011). What does your brain do with bad stereoscopic 3D? Talk presented at *I/ITSEC*, Orlando, FL.
34. Greenauer, N., Mello, C., Avraamides, M.N. & **Kelly, J.W.** (2011). The influence of existing knowledge structures on the formation of integrated spatial memories. Poster presented at the *Psychonomics Society 52<sup>nd</sup> Annual Meeting*, Seattle, WA.
33. **Kelly, J.W.** Sturz, B.R. & \*Hughes, L.A. (2011). Environmental Cues to Reference Frame Selection: Room Axes and Surfaces. Poster presented at the *Psychonomics Society 52<sup>nd</sup> Annual Meeting*, Seattle, WA.
32. \*Marsh, W.E., Oliver, J., Dark, V.J. & **Kelly, J.W.** (2011). The cognitive implications of semi-natural locomotion. Poster presented at the *8<sup>th</sup> Annual Emerging Technologies Conference*, Ames, IA.
31. \*Marsh, W.E., **Kelly, J.W.**, Dark, V.J. & Oliver, J. (2011). Assessing the use of cognitive resources in virtual reality. Poster presented at *HCI International*, Orlando, FL.
31. \*Marsh, W.E., **Kelly, J.W.**, Dark, V.J. & Oliver, J. (2011). Assessing the use of cognitive resources in virtual reality. Poster presented at *HCI International*, Orlando, FL.
30. **Kelly, J.W.** & Avraamides, M.N. (2010). Cross-modal influence of reference frames in spatial memory. Talk presented at the *Psychonomics Society 51<sup>st</sup> Annual Meeting*, St. Louis, MO.
29. **Kelly, J.W.** & \*Khounlavouth, A. (2010). Reference frames influence landmark selection: Evidence from overshadowing. Talk presented at *Spatial Cognition 2010*, in Mt. Hood, OR.

28. **Kelly, J.W.**, Avraamides, M.N. & McNamara, T.P. (2010). Reference frames influence spatial memory development within and across sensory modalities. Talk presented at *Spatial Cognition 2010*, in Mt. Hood, OR.
27. \*Marsh, W.E., Oliver, J., Dark, V.J. & **Kelly, J.W.** (2010). The cognitive implications of semi-natural locomotion. *World Conference on Innovative Virtual Reality*, Ames, IA.
26. **Kelly, J.W.** & McNamara, T.P. (2009). Reference directions during the development of spatial memories. Poster presented at the *Psychonomics Society 50<sup>th</sup> Annual Meeting*, Boston, MA.
25. **Kelly, J.W.** & McNamara, T.P. (2009). Use of geometric and non-geometric cues to maintain orientation during locomotion. *Annual Interdisciplinary Conference*, Jackson, WY.
24. **Kelly, J.W.**, Calderwood, M., McNamara, T.P. & Bodenheimer, B. (2009). The contributions of self-motion cues and room shape during navigation through virtual environments. Poster presented at the *Symposium on Applied Perception in Graphics and Visualization*, Crete.
23. Calderwood, M., **Kelly, J.W.**, McNamara, T.P. & Bodenheimer, B. (2009). Adding head tracking to desktop virtual reality with the Wii remote as an aid to spatial cognition. Poster presented at the *Symposium on Applied Perception in Graphics and Visualization*, Crete.
22. Avraamides, M.N., **Kelly, J.W.** & Shimi, A. (2008). Alignment effects in linguistically-encoded environments. Poster presented at the *Psychonomics Society 49<sup>th</sup> Annual Meeting*, Chicago, IL.
21. Avraamides, M.N., **Kelly, J.W.** & Kyranidou, M. (2008). Alignment effects in spatial reasoning about described scenes. Poster presented at the *International Congress of Psychology 29<sup>th</sup> Annual Meeting*, Berlin, Germany.
20. Avraamides, M.N. & **Kelly, J.W.** (2008). Sensorimotor interference in spatial reasoning. Talk presented at the *International Congress of Psychology 29<sup>th</sup> Annual Meeting*, Berlin, Germany.
19. **Kelly, J.W.** & McNamara, T.P. (2008). Spatial memory and spatial orientation. Talk presented at *Spatial Cognition 2008*, Freiburg, Germany.
18. **Kelly, J.W.**, McNamara, T.P., Bodenheimer, B., Carr, T.H. & Rieser, J.J. (2008). Geometric and featural cues to maintaining spatial orientation. Poster presented at the *Psychonomics Society 49<sup>th</sup> Annual Meeting*, Chicago, IL.
17. **Kelly, J.W.** & McNamara, T.P. (2007). Response mode differences in perspective taking: Differences in interference or differences in strategy? Poster presented at the *Psychonomics Society 48<sup>th</sup> Annual Meeting*, Long Beach, CA.
16. **Kelly, J.W.** & McNamara, T.P. (2007). Spatial memories of virtual environments. Poster presented at the *Cognitive Sciences Society 29<sup>th</sup> Annual Meeting*, Nashville, TN.
15. **Kelly, J.W.**, Avraamides, M.N. & Loomis, J.M. (2006). Sensorimotor alignment effects when reasoning about immediate and non-immediate environments. Poster presented at the *Psychonomics Society 47<sup>th</sup> Annual Meeting*, Houston, Texas.
14. Avraamides, M.N., **Kelly, J.W.** & Kyranidou, M.N. (2006). The effects of sensorimotor cues on spatial reasoning performance. Talk presented at *Spatial Cognition 2006*, Bremen, Germany.
13. Avraamides, M.N. & **Kelly, J.W.** (2006). The effects of sensorimotor cues on spatial reasoning performance. Talk presented at the *International Conference on Spatial Cognition*, Rome, Italy.

12. Macuga, K.L., Loomis, J.M., Beall, A.C., Smith, R. & **Kelly, J.W.** (2005). In steering without visual feedback, subjects can properly initiate return phase of a "lane change" maneuver. Poster presented at the *Vision Sciences Society* meeting, Sarasota, Florida.
11. Avraamides, M.N. & **Kelly, J.W.** (2005). Memory organization for spatial layouts learned in virtual reality. Talk presented at the *European Conference for Research on Learning and Instruction*, Nicosia, Cyprus.
10. Loomis, J.M., Beall, A.C., **Kelly, J.W.** & Macuga, K.L. (2005). Perceiving and acting in real and virtual environments. Talk presented at the *SPIE Human Vision and Electronic Imaging Conference*, San Jose, California.
9. **Kelly, J.W.**, Beall, A.C. & Loomis, J.M. (2004). Accurate steering performance with large heading errors on a curving path. Poster presented at the *Vision Sciences Society* meeting, Sarasota, Florida.
8. Loomis, J.M., **Kelly, J.W.**, Beall, A.C. & Bailenson, J.N. (2004). Sensing eye gaze with eccentric viewing. Poster presented at the *Vision Sciences Society* meeting, Sarasota, Florida.
7. Avraamides, M.N. & **Kelly, J.W.** (2004). Imagined perspective-changing within and across novel environments. Talk presented at *Spatial Cognition*, Frauenchiemsee, Germany.
6. **Kelly, J.W.**, Beall, A.C. & Loomis, J.M. (2003). Postural control without optic flow. Poster presented at the *Vision Sciences Society* meeting, Sarasota, Florida.
5. Avraamides, M.N. & **Kelly, J.W.** (2003). Spatial representations from perception and language. *Young Scientist Forum, International Spatial Cognition Summer Institute*, Bad Zwischenahn, Germany.
4. **Kelly, J.W.**, Loomis, J.M. & Beall, A.C. (2002). Accurate judgments of exocentric direction in large-scale space. Talk presented at the *Vision Sciences Society Meeting*, Sarasota, Florida.
3. Caskey, N., Olmstead, R.E., Jarvik, M.E., Madsen, D.C., Iwamoto-Schaap, P.N., Terrace, S.M., **Kelly, J.W.**, Griffith, T. & Wirshing, W.C. (2001). The acute effects of low dose naltrexone in normal heavy smokers. Poster presented at the *Society for Research on Nicotine and Tobacco* meeting, Savannah, GA.
2. **Kelly, J.W.**, Madsen, D.C., Olmstead, R.E., Jarvik, M.E., Iwamoto-Schaap, P.N. & Shapiro, D. (2000). Prevalence of perceived environmental smoking cues. Poster presented at the *Society for Research on Nicotine and Tobacco* meeting, Washington, D.C.
1. Olmstead, R.E., **Kelly, J.W.**, Iwamoto-Schaap, P.N., Madsen, D.C., Huerta, L. & Chhin, C.S. (1999). Acute tolerability of mecamlamine and bupropion combination treatment for smoking cessation. Poster presented at the *Society for Research on Nicotine and Tobacco* meeting, San Diego, CA.

#### EXTERNAL GRANT ACTIVITY:

- Army Research Lab STTC (funded). Gilbert, S., Oliver, J. & Winer, E. “Advanced Live, Virtual, and Constructive Training systems.” Role: Senior personnel. \$55,000 in 2011 research expenditures awarded to J.W. Kelly (Total award amount: \$2,686,000, 9/29/10 – 9/28/13).
- National Science Foundation (submitted, August 2011): “Cue Integration during Spatial Orientation.” Role: PI. \$170,689 requested for Iowa State University (\$288,217 total).

- European Regional Development Fund and The Republic of Cyprus (submitted, July 2011): “Promoting configurational knowledge during GPS-assisted navigation.” Role: co-PI. Approximately \$8,500 requested for Iowa State University (\$169,000 total).
- European Regional Development Fund and The Republic of Cyprus (submitted, July 2011): “Spatial updating following incidental learning of locations.” Role: co-PI. Approximately \$4,300 requested for Iowa State University (\$178,000 total).
- European Regional Development Fund and The Republic of Cyprus (not funded, 2010): “Reactivating Sensorimotor Codes: The Role Of Gesture In Perspective-Taking.” Role: co-PI. Approximately \$9,000 requested for Iowa State University (\$147,000 total).
- NSF (rated competitive, high priority; not funded, 2010): “Spatial Orientation during Navigation.” Role: co-PI. Approximately \$245,000 requested for Iowa State University (\$424,000 total).

**FORMAL TEACHING:**

- *Primary instructor, Iowa State University:*
  - Cognitive Psychology of Human-Computer Interaction, Fall 2009, Fall 2010, Fall 2011
    - Average instructor rating = 4.62/5.0
  - Human Factors in Technology, Spring 2010, Fall 2010, Spring 2011, Fall 2011
    - Average instructor rating = 4.46/5.0
- *Primary instructor, UC Santa Barbara:*
  - Introduction to Perception, Summer 2004
  - Advanced Research Methods, Summer 2006

**INFORMAL TEACHING:**

- *Undergraduate level (Fall 2009-present):*
  - Supervised twelve undergraduate research assistants from fall 2009 to present
  - Guest speaker: Psi Chi induction ceremony, Iowa State University
  - Guest lecture: Iowa State Research Experience for Undergraduates program, Summer 2010, 2011
- *Graduate level (Fall 2009-present):*
  - Chaired or co-chaired ten master’s thesis committees and served on two dissertation committees and four master’s thesis committee.
  - Supervised five graduate research assistants from fall 2009 to present

**PROFESSIONAL SERVICE:**

- Assistant program chair: Society for Computers in Psychology conference, 2009
- Conference program committee member, Association for Applied Graphics and Visualization conference, 2009

**UNIVERSITY SERVICE:**

- Human-Computer Interaction supervisory committee (2010-present)
- Human-Computer Interaction faculty search committee (2010)

**EDITORIAL REVIEWER (AD-HOC):**

- *Journals:*
  - ACM: Transactions on Applied Perception
  - Acta Psychologica
  - Cognition
  - Cognitive Science
  - Experimental Brain Research
  - Experimental Psychology
  - International Journal of Human-Computer Studies
  - Journal of the Acoustical Society of America
  - Journal of Experimental Psychology: General
  - Journal of Experimental Psychology: Human Perception & Performance
  - Journal of Experimental Psychology: Learning, Memory & Cognition
  - Journal of Neuroscience Methods
  - Journal of Visual Languages and Computing
  - Memory & Cognition
  - Presence: Teleoperators and Virtual Environments
  - Psychological Research
  - Psychonomic Bulletin & Review
  - Quarterly Journal of Experimental Psychology
  - Spatial Cognition & Computation
- *Funding agencies:*
  - National Science Foundation
- *Conferences:*
  - CHI (Computer-Human Interaction) Annual Conference
  - Cognitive Science Society Annual Conference
  - Symposium on Applied Perception in Graphics and Visualization
  - WINVR (World Conference on Innovative Virtual Reality)