

# Oh-Sang Kwon

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Science and Technology  
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## Education

1993-2000: Department of Psychology, College of Liberal Arts, Korea University. B.A.

2000-2002: Department of Psychology, Graduate School, Korea University.

M.S. Major area: Experimental Psychology

Thesis Title: *Study of the evolution of color terms by analyzing the psychological distances between focal colors.*

2003-2005: Department of Psychological Sciences, Purdue University. M.S.

Major area: Mathematical and Computational Cognitive Science

Thesis Title: *Multi-resolution model of human motor control*

2005-2009: Department of Psychological Sciences, Purdue University. Ph.D.

Major area: Mathematical and Computational Cognitive Science

Thesis Title: *Early correction of human goal-directed movement.*

## Academic appointment

2009-2013: Center for Visual Science, University of Rochester. Post doc.

2013-2015: Center for Visual Science, University of Rochester. Research Associate.

2015-Current: Human & System Engineering, UNIST (South Korea), Assistant Professor.

## Professional Memberships and Service

### Membership

Vision Sciences Society

Society for Mathematical Psychology

### Journal Reviewing

Acta Psychologica, Behavior Research Methods, Journal of Vision,

Journal of Neuroscience, Korean Journal of Cognitive Science (editorial board).

## Experience

1994-1996: Drafted to the army and discharged honorably as Sergeant, Korean Army

2000 : Co-organizer, 2000 AIC (International Colour Association) Meeting in Seoul

2000-2002: Research Assistant, Korea University Behavioral Science Research Center.

2003-2008: Teaching Assistant, Department of Psychological Sciences, Purdue University.  
2004, 2005, 2007: Co-organizer, Purdue Winer memorial lectures

### **Scholarships, awards**

1998 - 1999: Korea University Alumni Scholarship  
2006 : Graduate School summer research grant, Purdue University  
2007 : Graduate School summer research grant, Purdue University  
2008 - 2009: Purdue Research Foundation research grant  
2014 : Cosyne travel grant

### **Publications**

**Kwon, O.-S.**, Tadin, D., & Knill, D.C. (2015) A unifying account of visual motion and position perception. *PNAS*.

**Kwon, O.-S.**, & Knill, D.C. (2013) The brain uses adaptive internal models of scene statistics for sensorimotor estimation and planning. *PNAS*, 110(11), e1064-73.

Zhang\*\*, R., **Kwon\*\***, **O.-S.** & Tadin, D. (2013) Illusory motion of stationary stimuli in visual periphery: evidence for a strong centrifugal prior in motion processing. *Journal of Neuroscience*, 33, 4415-4423.

\*\* equally contributing authors.

Czyż S.H., Breslin G., **Kwon, O.-S.**, Mazur, M., Kobiałka, K., Pizlo, Z. (2013) Especial skill effect across age and performance level: the nature and degree of generalization. *Journal of Motor Behavior*, 45(2), 139-152.

**Kwon, O.-S.**, Zelaznik, H. N., Chiu, G. C., & Pizlo, Z. (2011) Human Motor Transfer Is Determined by the Scaling of Size and Accuracy of Movement. *Journal of Motor Behavior*, 43, 15-26.

Wu, C. C., **Kwon, O.-S.**, & Kowler, E. (2010) Fitts's Law and speed/accuracy trade-offs during the sequences of saccades: Implications for strategies of saccadic planning. *Vision Research*, 50, 2142–2157.

### **Publications (in review)**

Czyż, S.H., **Kwon, O.-S.**, Marzec, J., Styrkowiec, P. (in review) Visual uncertainty determines the extent and degree of especial skill.

### **Publications (in preparation)**

**Kwon, O.-S.**, & Knill, D.C. (in preparation) Sequential effects in velocity estimation of self-generated motion.

**Kwon, O.-S.**, & Knill, D.C. (in preparation) Learning category contingent speed priors for object interception.

**Kwon, O.-S.**, Shelton, J.N., & Pizlo, Z. (in preparation) Significance of early correction in human goal-directed movement.

**Kwon, O.S.**, Zhang, R., & Tadin, D. (in preparation). Temporal evolution of motion direction judgments.

Zhang, R., **Kwon, O.S.**, & Tadin, D. (in preparation). Specificity and transfer in perceptual learning of motion.

### **Publications (in Korean)**

- Kim, Y.S., Kim, S.H., **Kwon, O.S.**, & Yeo, M.S. (2001). Psychological Structure of the Hue Modifying Adjectives in Korean. *Journal of Korean Society of Color Studies*, 15(1), 21-29.
- Lee, M.Y., Kim, Y.I., Kim, Y.S., Pak, H.S., Choi, Y.H., & **Kwon, O.S.** (2002). Korean color naming system for textile fashion industry. *Journal of Korean Society of Color Studies*, 16(2), 1-24.

### **Conference proceedings**

- Shelton, J.N., **Kwon, O.S.** & Chiu, G. (2008). Rapid Computation of Time-Optimal, Open-Loop Forearm Movement, 17<sup>th</sup> *International Federation of Automatic Control World Congress*.
- Kwon, O.S.**, Shelton, J.N. & Chiu, G. (2008). Single Feedback Model of Human Goal-directed Movement, *ASME Dynamic Systems and Control Conference*.

### **Conference abstracts (conference talks are marked with \*)**

- \***Kwon, O.S.**, Pizlo, Z., Zelaznik, H. N. & Chiu, G. (2005). Multi-resolution model of human motor control. *The Annual Meeting of the Society for Mathematical Psychology*.
- Kwon, O.S.**, Pizlo, Z., Zelaznik, H. N. & Chiu, G. (2006). Multi-resolution model of human motor control. *Vision Sciences Society Meeting*.
- \***Kwon, O.S.**, & Shelton, J. N. (2007). Trajectories of Goal-directed Arm Movement. *The Annual Meeting of the Society for Mathematical Psychology*.
- Kwon, O.S.**, Shelton, J. N. (2008). Intermittent feedback model of goal-directed forearm movement. *Vision Sciences Society Meeting*.
- Kwon, O.S.**, Shelton, J. N., & Pizlo, Z. (2008). Early Feedback Model of human Goal-directed Movement. *49th Annual Meeting of the Psychonomic Society*.
- Kwon, O.S.**, & Knill, D (2010). Extrapolation of target movement is influenced by the preceding velocities rather than by the mean velocity. *Vision Sciences Society Meeting*.
- Kwon, O.S.**, & Knill, D. (2011). Humans adaptively use temporal correlations in stimulus history to estimate velocity. *Vision Sciences Society Meeting*.
- Kwon, O.S.**, & Knill, D. (2012). Temporal dependency in estimation of target velocity disappears in self-generated stimuli. *Vision Sciences Society Meeting*.
- \***Kwon, O.S.**, Tadin, D, & Knill, D. (2013). Bayesian observer model of the motion induced position shift. *Vision Sciences Society Meeting*.
- \*Knill, D., & **Kwon, O.S.** (2013). Learning category contingent speed priors for object interception. *Vision Sciences Society Meeting*.
- Kwon, O.S.**, Tadin, D, & Knill, D. (2014). An optimal object-tracking model provides a unifying account of motion and position perception *COSYNE (Computational and Systems Neuroscience)*.
- \***Kwon, O.S.**, Tadin, D, & Knill, D. (2014). An optimal object-tracking model provides a unifying account of motion and position perception *Modvis (Computational and*

*Mathematical Models in Vision*).

**Kwon, O.S.**, Tadin, D., & Knill, D. (2014). Optimal tracking model accounts for perceptual conflict between motion and position in the curveball illusion. *Vision Sciences Society Meeting*.

\***Kwon, O.S.**, Zhang, R., & Tadin, D. (2015). Temporal evolution of motion direction judgments. *Vision Sciences Society Meeting*.

Zhang, R., **Kwon, O.S.**, & Tadin, D. (2015). Specificity and transfer in perceptual learning of motion. *Vision Sciences Society Meeting*.

### **Invited talk**

A unifying model of visual position and motion perception. (April 17, 2015) *Neuroscience retreat, University of Rochester*.