Curriculum Vitae of Hugo Bruggeman, Ph.D.

I. Personal Information

Dept. of Cognitive and Linguistic Sciences
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II. Education

2004 Doctor of Philosophy (Ph.D.) Dept. of Psychology, University of Minnesota, USA. Advisor & mentor: Dr. Herbert L. Pick Jr.

1996 Doctoraal (B.Sc.) Human Movement Sciences, Vrije Universiteit, Amsterdam, the Netherlands.

III. Academic Positions

2009 - Assistant Professor of Research, Dept. of Cognitive, Linguistic and Psychological Sciences, Brown University, USA.

2010 Visiting Scholar (Jan-March), Center for Neuroscience and Cognitive Systems, Italian Institute of Technology, Genova, Italy. Collaborator: Fulvio Domini.

2004 - 08 Post Doctoral Fellow, Perception Action Laboratory, Brown University, USA. Supervisor: Dr. William H. Warren, Jr.

2001 - 04 Research Assistant, Spatially Coordinated Behavior Laboratory, University of Minnesota, USA. Supervisor: Dr. Herbert L. Pick, Jr.

1999 - 02 Research Assistant, Human Sensorimotor Control Laboratory, University of Minnesota, USA. Supervisor: Dr. Jürgen Konczak.

1996 - 97 Visiting Scholar, Minnesota Laboratory for Low Vision Research, University of Minnesota, USA. Supervisor: Dr. Gordon E. Legge.

IV. Other Professional Experience

2011 - VA Medical Center, Providence. Main project: Functional assessment of ACL-deficient knees using virtual reality navigation; Advisor on the study's design; Collect and Analyze data.

1998 - 1999 User Centered Design Team, Web Development, University of Minnesota & IBM-Vancouver Main projects: UMN homepage (*umn.edu*), UMN One Stop (*onestop.umn.edu*), and ISEEK (*iseek.org*); Tested website functionality; Conducted survey; Analyzed survey data; Developed and Built usability testing lab.

V. Grants & Awards

in review *R01 (NEI):* Entitled: *Perceptual Augmentation for Improved Low Vision Mobility*, resubmitted on 5 July 2011 and soon to be reviewed.

2008 *Center for Vision Research Award:* One academic-year fellowship in recognition of outstanding vision research program, Brown University, USA.

2002 *J.J. Jenkins Award:* Award for outstanding Center participation, Center for Cognitive Sciences, University of Minnesota, USA.

2001 *The Turtle Award:* Keynote speaker at the annual spring retreat of the Center for Cognitive Sciences, University of Minnesota, USA.

2000 *Eva O. Miller Fellowship:* One academic-year fellowship in recognition of an outstanding graduate student research program, Graduate School, University of Minnesota, USA.

1996 *VSB-beurs:* One year research scholarship to study abroad, VSB Foundation, the Netherlands.

VI. Publications, Manuscripts & Papers

a) Peer Reviewed Publications

Bruggeman, H. & Warren, W.H. (2010). The direction of walking – but not throwing or kicking – is adapted by optic flow. *Psychological Science*, 21(7), 1006-1013.

Bruggeman, H., Pick Jr., H.L. & Rieser, J.J. (2009). Biomechanical Versus Inertial Information: Stable Individual Differences in Perception of Self-Rotation. *Journal of Experimental Psychology: Human Perception and Performance*, 35(5), 1472-1480.

Bruggeman, H., Zosh, W.D. & Warren, W.H. (2007). Optic flow drives human visuo-locomotor adaptation. *Current Biology*, 17(23), 2035-2040.

Bruggeman, H., Yonas, A. & Konczak, J. (2007). The processing of linear perspective and binocular information for action and perception. *Neuropsychologia*, 45(7), 1420-1426.

Bruggeman, H., Pick Jr., H.L. & Rieser, J.J. (2005). Learning to throw on a rotating carousel: Recalibration based on limb dynamics and projectile kinematics. *Experimental Brain Research*, 163(2), 188-197.

Bruggeman, H. & Legge, G.E. (2002). Psychophysics of reading XIX. Hypertext search and retrieval with low vision. *Proceedings of the IEEE*, 90, 94-103.

Bruggeman, H. & den Brinker, B.P.L.M. (1998). The effect of window width and window height on reading connected text with a CCTV magnifier. *Proceedings VISION'96, International Conference on Low Vision*, 1, 282-296.

den Brinker, B.P.L.M. & Bruggeman, H. (1996). Visual requirements for reading: The importance of a large field of view in reading with a magnifier. *Journal for Videology*, 1, 27-38.

b) Book Chapters

Bruggeman, H., & Warren, W.H. (2005). Integrating target interception and obstacle avoidance. In H.Heft & K.L. Marsh (Eds.), *Studies in Perception and Action VIII* (pp. 65-68). New Jersey: Lawrence Erlbaum

c) Submitted Manuscipts

Bruggeman, H., & Domini, F. (invited for resubmission). Pointing accuracy is mainly determined by visual on-line control, *PlosOne*.

Cohen, J.A., Bruggeman, H., & Warren, W.H. (invited for resubmission). Behavioral dynamics of avoiding a moving obstacle, *Journal of Experimental Psychology: Human Perception and Performance*.

Bruggeman, H., & Domini, F. (submitted). Positive afterimages reveal the perception of dynamic information during tool use, *Nature*.

d) Manuscripts in Preparation

Bruggeman, H., Fajen, B. R., & Warren, W.H. (in final preparation). Predicting locomotor paths through novel complex environments, *Journal of Vision*.

Bruggeman, H., & Warren, W.H. (in preparation). Optic flow calibrates the direction of thrust of a family of locomotion actions.

Bruggeman, H., & Warren, W.H. (in preparation). Effects of perceived distance, time-to-contact, and momentum on obstacle avoidance: The chainmail experiment.

e) Invited Presentations

Bruggeman, H. (2010, January 28). *Towards the identification of action systems*. Host: Mark Hollands, The School of Sport and Exercise Sciences, University of Birmingham, UK.

Rieser, JJ., Pick, HL., Bruggeman, H. & Riecke, B. (2008, 17-18 April) *Information to Perceive Locomotion in Physical and Virtual Environments*. Workshop cyberwalk, Max-Planck-Institut für biologische Kybernetik, Tübingen, Germany.

Bruggeman, H. (2008, April 10). *Optic flow: a step in the right direction*. Host: Zsuzsa Kaldy, Dept. of Psychology, UMass Boston, Massachusetts, USA.

Bruggeman, H. (2007, January 23). *Visual control of locomotion; learning to walk with a displacement in optic flow*. Host: Karen Adolph, Dept. of Psychology, NYU, New York, USA.

Bruggeman, H. (2005, July 9). *Learning to throw on a rotating carousel*. Talk at symposium: Perceptual learning and the control of action, ICPA, Monterey, California, USA.

Bruggeman, H. (2005, 25 March). *Intercepting a moving target in the presence of an obstacle*. Host: Claire Michaels, Dept. of Psychology, University of Connecticut, USA.

Bruggeman, H. (2003, 9 June). *Learning to throw on a rotating carousel; Towards a theory of Action Systems*. Host: Alan Wing, Sensory Motor Neuroscience, University of Birmingham, UK.

Bruggeman, H. (2003, 3 June). *Throwing on a rotating carousel; Towards a theory of Action Systems.* Host: Harold Nefs, Dept. Physics of Man, Helmholtz Institute, Utrecht, the Netherlands.

Bruggeman, H. (2003, 27 May). *Investigating hurling movements; Towards a theory of Action Systems.* Hosts: Eli Brenner & Jeroen Smeets, Dept. of Neuroscience, Rotterdam, the Netherlands.

Bruggeman, H. (2001, 9 May). *Directional Recalibration in throwing.* Keynote speaker at the annual retreat of the Center for Cognitive Sciences, University of Minnesota, Minneapolis, Minnesota, USA.

f) Presentations at Meetings

Bruggeman, H, Fantoni, C, Caudek, C, Domini, F, (2010, August 22-26). Reaching movement accuracy is mainly determined by visual online control. ECVP, Lausanne, Switzerland.

Bruggeman, H., & Warren, W.H. (2010, May 7-12). Are the optic flow and egocentric direction strategies for steering control during walking linearly combined? VSS, Naples, Florida, USA.

Bruggeman, H., & Warren, W.H. (2009, May 8-13). *Stepping in the right direction: control and adaptation of walking from optic flow.* VSS, Naples, USA.

Bruggeman, H., & Warren, W.H. (2008, May 14-19). *Optic flow recalibrates the direction of walking but not throwing.* VSS, Naples, USA.

Bruggeman, H., & Warren, W.H. (2007, November 15-18). *Effects of perceived distance, time-to-contact, and momentum on obstacle avoidance: The chainmail experiment.* Psychonomics, Long Beach, California, USA.

Warren, W.H., Bruggeman, H., & Zosh, W. (2007, May 11-16). *Optic flow serves as a teaching signal for visual-locomotor adaptation.* VSS, Sarasota, Florida, USA.

Bruggeman, H., Rothman, D., & Warren, W.H. (2006, May 5-10). *Is obstacle avoidance controlled by perceived distance or time-to-contact?* VSS, Sarasota, Florida, USA.

Cohen, J.A., Bruggeman, H., & Warren, W.H. (2006, May 5-10). *Combining moving targets and moving obstacles in a locomotion model.* VSS, Sarasota, Florida, USA.

Bruggeman, H., & Warren, W.H. (2005, July 5-10). *Integrating target interception and obstacle avoidance.* ICPA, Monterey, California, USA.

Cohen, J.A., Bruggeman, H., & Warren, W.H. (2005, May 6-11). *Switching behavior in moving obstacle avoidance.* VSS, Sarasota, Florida, USA.

Bruggeman, H., & Warren, W.H. (2005, May 6-11). *Integrating target interception and obstacle avoidance.* VSS, Sarasota, Florida, USA.

Bruggeman, H., Rieser, J.J., & Pick, H.L. Jr. (2004, 30 April-5 May). *An action system analysis of visuomotor learning.* VSS, Sarasota, Florida, USA.

Bruggeman, H., Eid, C.E., Rieser, J.J., & Pick, H.L. Jr. (2003, 22-24 May). *Perturbing throwing movements; Multiple processes of adaptation.* EWOMS, Münster, Germany.

Bruggeman, H., Eid, C.E., Rieser, J.J., & Pick, H.L. Jr. (2003, 9-14 May). *Alteration of the direction of throwing; Multiple processes of adaptation.* VSS, Sarasota, Florida, USA.

Yonas, A., Bruggeman, H., & Konczak, J. (2002, 10-15 May). *The role of binocular information in the control of perception and action.* VSS, Sarasota, Florida, USA.

Bruggeman, H., Pick, H.L. Jr., & Rieser, J.J. (2001, 24-29 June). *Directional recalibration in throwing.* ICPA, Storrs, Connecticut, USA.

Bruggeman, H., Pick, H.L. Jr. Rieser, J.J. , & Wagner, D.G. (2000, 16-19 November). *Directional recalibration in locomotion and throwing.* Psychonomics, New Orleans, Louisiana, USA.

Bruggeman, H., Guidice, N., Stankiewicz, B.J., Legge, G.E. (2000, 30 April-May 5). *Distal target localization by the blind.* ARVO2000, Fort Lauderdale, Florida, USA.

Bruggeman, H., & Legge, G.E. (1999, 12-16 July). *Searching hypertext with low vision.* VISION'99, International Conference on Low Vision, New York, New York, USA.

Bruggeman, H., & Littman, B. (1998, 13-17 September). *Getting to know your users: The need for usability testing of web-based applications.* WebdevShare, Indiana University, Bloomington, Indiana, USA.

Bruggeman, H., & Legge, G.E. (1997, 2-4 October). *Searching for information in hypertext with simulated low vision.* Minnesota Conference on Vision for Reach and Grasp. Minneapolis, Minnesota, USA.

den Brinker, B.P.L.M., & Bruggeman, H. (1995, 15 September). *The effect of window height and window width on reading with a CCTV magnifier.* Workshop Videology, Visio, Hilversum, the Netherlands.

den Brinker, B.P.L.M., & Bruggeman, H. (1994, 19-20 May). *Motor aspects of the use of reading aid by people with low vision.* NWO-conference, Maastricht, the Netherlands.

g) Presentations at Universities

Bruggeman, H. (2006, 4 December). *Motor Control and Psychology: Engaged NOT to be married?* Dept. of Cognitive & Linguistic Sciences, Brown Univeristy, Providence, RI, USA.

Bruggeman, H. (2004, 8 November). *Learning to throw on a rotating carousel.* Dept. of Cognitive & Linguistic Sciences, Brown Univeristy, Providence, RI, USA.

Bruggeman, H. (2004, 13 May). *Learning to throw on a rotating carousel.* Public presentation Ph.D. defense, Center for Cognitive Sciences, Minneapolis, USA.

Bruggeman, H. (2003, 11 June). *Learning to throw on a rotating carousel; Towards a theory of Action Systems.* Host: Harold Beckering, NICI, Nijmegen, the Netherlands.

Bruggeman, H. (2003, 10 June). *Throwing on a rotating carousel; Towards a theory of Action Systems.* Hosts: Geert Savelsberg & Rob Withagen, Free University, Amsterdam, the Netherlands.

Bruggeman, H. (2002, 24 October). *Why rotating people on a carousel makes my head spin!* Center for Cognitive Sciences, University of Minnesota, USA.

Bruggeman, H. (2001, 22 October). *Effect of mono- and binocular vision on pointing movements to a trapezoidal display: Evidence for an interaction of dorsal and ventral stream visual processing?* Vision Sciences, University of Minnesota, USA.

Bruggeman, H. (2001, 9 January). *Directional recalibration in throwing.* Hosts: Claire Michaels & Rob Withagen, Free University, Amsterdam, the Netherlands.

VII. Teaching & Mentoring

a) Instructor

2011 Visualizing Vision—Research Methods, Dept. of Cognitive, Linguistic and Psychological Sciences, Brown University, USA.

2003 Introduction to Motor Learning and Control, School of Kinesiology, co-instructed with Paul Cassidy, University of Minnesota, USA.

b) Teaching Assistant

2001 Introduction to Research Methods and Statistics, Instructor: Bryan Dik, Dept. of Psychology, University of Minnesota, USA.

2000 Introduction to Cognitive Science, Instructor: Brian Sundermeier, Dept. of Psychology, University of Minnesota, USA.

2000 Introduction to Biomechanics, Instructor: Dr. Jürgen Konczak, School of Kinesiology, University of Minnesota, USA.

c) Guest Lectures

2010 Perception, Instructor: Dr. Joo-Hyun Song, Dept. of Cognitive, Linguistic and Psychological Sciences, Brown University, USA.

2007 Perception, Instructor: Dr. Fulvio Domini, Dept. of Cognitive and Linguistic Sciences, Brown University, USA.

2002 Perceptual Development, Instructor: Dr. Herbert L. Pick. Jr., Institude of Child Development, University of Minnesota, USA.

1998 Motor Control Learning and Development, Instructor: Dr. Peter Hancock, School of Kinesiology, University of Minnesota, USA.

d) Student Mentoring

2010 - Graduate Student: Zachary Page. Project: *TBA*. Dept. of Cognitive, Linguistic and Psychological Sciences, Brown University.

2004 - 09 Graduate Student: Jon Cohen. Project: *Behavioral dynamics of avoiding a moving obstacle*. Dept. of Cognitive and Linguistics Sciences, Brown University.

2005 - 08 Graduate Student: Jeffrey J. Hutchison. Project: *Metabolic cost as a control parameter in the for-*

mation of locomotor behavior. Dept. of Cognitive and Linguistics Sciences, Brown University.

2002 - 04 Undergraduate Student: Vadzim Piuneu. Project: *Circular treadmill stepping captures perception of self-locomotion*. Dept. of Psychology, University of Minnesota.

2002 - 03 Undergraduate Student: Christine Eid. Project: *Alteration of the direction of throwing*. Dept. of Psychology, University of Minnesota.

2002 - 03 Undergraduate Student: Charles Lambert. Project: *The preferred speed for stepping on a circular treadmill*. Dept. of Psychology, University of Minnesota.

2002 Undergraduate Student: Angela Pawlak. Project: *Distance perception in wheelchair locomotion*. Research Experience for Undergraduates in the Behavior and Cognitive Sciences, University of Minnesota.

2001 Undergraduate Student: Amy Diesch. Project: *Stability of the perceptual recalibration of turning*. Dept. of Psychology, University of Minnesota.

VIII. SERVICE

a) University Service

2001 - 02 Elected Student Representative of the Governing Council of the Center for Cognitive Sciences, University of Minnesota, USA.

1998 - 02 Member and Chair, External Colloquium Committee, Center for Cognitive Sciences, University of Minnesota, USA.

2000 Member, Committee Welcome Weekend, Dept. of Psychology, University of Minnesota, USA.

1999 Member, Millennium Project, Center for Cognitive Sciences, University of Minnesota, USA.

b) Ad hoc reviewer

2011 Journal of Experimental Psychology: Human Perception and Performance

2010 Current Biology, Journal of Experimental Brain Research

2009 Journal of Vision, Perception, Journal of Experimental Psychology: Human Perception and Performance

2008 Journal of Experimental Psychology: Human Perception and Performance, Developmental Science, The Open Sports Sciences Journal

2007 National Science Foundation (NSF)

2006 Brain Research, Transactions on Applied Perception

2001 Proceedings of the IEEE

IX. MEMBERSHIPS

2003 - Vision Sciences Society

1999 - International Society for Ecological Psychology

X. Other Awards

a) Equipment Awards

2000, 2002 Minigrant from the Center for Cognitive Sciences, University of Minnesota, USA.

b) Travel Awards

2000, 2003 Award from the Center for Cognitive Science to present at: Psychonomics 2000, New Orleans, Louisiana; VSS 2003, Sarasota, Florida.

1999 - 2003 Gough Award from the Dept. of Psychology to present at: VISION 1999, New York, New York; ARVO 2000, Fort Lauderdale, Florida; ICPA 2001, Storrs, Connecticut; EWOMS 2003, Münster, Germany.