

## **Curriculum Vitae (May 2010)**

**Name:** Dr Kielan Nicholas Yarrow.  
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**Date of birth:** June 18th, 1975.

## **Education & professional qualifications**

### **1987-1993. Eaton (C.N.S.) secondary comprehensive.**

G.C.S.E.s: Nine, seven at grade A.

A levels: Maths, grade A, English literature, grade A, History, grade A.

### **1993- June 1997. Keele University.**

BSc History and Psychology, joint degree with honours: First class.

### **September 1997-September 1998. University College London.**

MSc Experimental Methods in Psychology: Distinction.

### **December 1999-December 2002. Institute of Neurology, UCL.**

PhD: "Temporal illusions subsequent to movement."

### **October 2007-December 2007. City University.**

Introductory certificate in teaching in higher education.

## **Employment**

**Since October 2006. Lecturer.** Department of Psychology, City University.

**April 2004-September 2006. Post-doctoral research assistant.** Jointly at the Sobell department, ION, and the Institute of Cognitive Neuroscience, UCL.

**October 2003-March 2004. College Teacher.** Department of Psychology, UCL.

**December 2002-September 2003. Post-doctoral research assistant.** Sobell department of motor neuroscience and movement disorders, ION, UCL.

**December 1998-December 1999. Research assistant.** MRC Human movement and balance unit.

## **Skills**

### **Research techniques:**

- Computer-based psychophysics.

- Oculography (infra-red, EOG).
- Electromyography (EMG) and motor evoked potentials (MEPs).
- Transcranial magnetic stimulation (TMS) and repetitive TMS (rTMS).
- Electroencephalography (EEG) including event-related potentials (ERP).

### **Computing skills:**

- High-level programming languages (Visual C++, Visual Basic, Turbo Pascal, Matlab, MELab).
- Web design (HTML).
- Statistical/signal-processing and spreadsheet applications (including SPSS, Minitab, Matlab, Excel).
- Presentation and database management packages, word processing (including Word, Powerpoint, CorelDraw, Access).

### **Teaching experience and supervision**

#### **Teaching at UCL:**

Lab demonstrator for BSc Psychology, 2000/1, 2001/2.

Ran tutorials for BSc Psychology, 2003/4.

Contributed BSc Psychology lectures to:

- B002 (Methods and approaches in Psychology), 2003/4.
- B222 (Biological basis of behaviour), 2003/4, 2005/6.
- B224 (Perception, attention and action), 2003/4, 2004/5, 2005/6.
- C567 (Topics in Neurobiology), 2003/4.

Joint supervision of BSc Psychology final year project, 2004/5.

Contributed MSc Experimental methods in Psychology lectures to:

- Special research methods options (Cognitive Psychology), 2003/4.

Joint supervision of MSc Clinical Neuroscience project, 2001/2.

#### **Teaching at City University:**

Contributed BSc Psychology lectures to:

- PS2003 (Cognitive Psychology II), half of course, 2006/7, 2007/8, 2008/9.
- PS2004 (Biological Psychology), entire course, 2006/7, 2007/8, 2008/9, 2009/10.
- PS3019 (Topics in Cognitive Neuroscience), half of course, 2007/8, 2008/9.

Introductory tutorials (BSc Psychology), 2006/7, 2007/8, 2008/9, 2009/10.

Supervision of BSc Psychology final year projects, 2006/7, 2007/8, 2008/9, 2009/10.

Contributed MSc Research Methods and Psychology lectures to:

- PSM511 (Contemporary Issues in Psychological Research), single lecture, 2008/9.

Supervision of MSc Research Methods and Psychology project, 2008/9.

### **PhD supervision:**

- Stergios Makris 2008-.
- Aviad Hadar 2009-.

### **Ad hoc reviews for the following journals**

- Vision Research.
- Perception & Psychophysics.
- Journal of the Royal Society of Medicine.
- Journal of Experimental Psychology: Human Perception and Performance.
- Current Biology.
- Experimental Brain Research.
- Perception.
- Journal of Health Psychology.
- Journal of the Acoustical Society of America.
- Acta Psychologica

### **Other reviewing activities**

- Grant application reviewer for BBSRC (Biotechnology & Biological Sciences Research Council)
- Referee (“rapporteur”) on end of award assessments for ESRC (Economic & Social Research Council).
- Panel member assessing applications for short-term scientific missions under COST (European cooperation in the field of scientific and technical research) action BM0605, “Consciousness: A transdisciplinary, integrated approach.” (2007-2011).

### **Professional memberships**

- E.P.S. (Experimental Psychology Society), 2004-.
- Association for the Scientific study of Consciousness, 2004-2006.

### **Grants, awards and prizes**

- 2010 Royal Society International Travel Grant: “Investigating motor-sensory temporal order recalibration with a low-bias simultaneity judgement task.” £4000.
- 2010 Nuffield Foundation Undergraduate Research Bursary (as supervisor): “A behavioural and TMS investigation of the response repetition effect.” £1140.
- 2009-2010 Experimental Psychology Society (EPS) Small Grant: “A functional role for tactile suppression in sensory cancellation?” £2000.
- 2008 Nuffield Foundation Undergraduate Research Bursary (as supervisor): “Adapting the point of subjective simultaneity for audio-visual events: Does efferent information influence the degree of adaptation?” £1110.
- 2007 City University Pump Priming Research Development Fund: “Investigating

multimodal temporal perception". £1500.

- 2002 Queen Square Symposium student poster prize (second place).
- 2001 Brain travel grant (to attend and present at MCC2001, Varna, Bulgaria).
- 1995 Second Year BSc History prize for high achievement.
- 1994 Astronomy subsidiary course prize for high achievement.

## **Publications**

### **Peer-reviewed journal articles:**

Ley, I., Haggard, P., & **Yarrow, K.** (2009). Optimal integration of auditory and vibrotactile information for judgments of temporal order. *Journal of Experimental Psychology: Human Perception & Performance*, 35, 1005-1019.

**Yarrow, K.**, Brown, P. & Krakauer, J.W. (2009). Inside the brain of an elite athlete: the neural processes that support high achievement in sports. *Nature Reviews Neuroscience*, 10, 585-596.

Sauleau, P., Eusebio, A., Thevathasan, W., **Yarrow, K.**, Pogosyan, A., Zrinzo, L., Ashkan, K., Aziz, T., Vandenberghe, W., Nuttin, B., & Brown, P. (2009). Involvement of the Subthalamic Nucleus in engagement with behaviourally relevant stimuli. *European Journal of Neuroscience*, 29, 931-42.

**Yarrow, K.**, Haggard, P., & Rothwell, J.C. (2008). Vibrotactile-auditory interactions are post-perceptual. *Perception*, 37, 1114-30.

Brücke, C., Kempf, F., Kupsch, A., Schneider, G., Krauss, J.K., Aziz, T., **Yarrow, K.**, Pogosyan, A., Brown, P., & Kühn, A.A. (2008). Movement-related synchronisation of gamma activity is lateralized in patients with dystonia. *European Journal of Neuroscience*, 27, 2322-9.

Kempf, F., Trottenberg, T., Doyle, L., Chen, C.C., **Yarrow, K.**, Brown, P., & Kühn, A.A. (2007). The subthalamic region is activated during valence-related emotional processing in patients with Parkinson's disease. *European Journal of Neuroscience*, 26, 767-74.

Androulidakis, A.G., Doyle, L.M., **Yarrow, K.**, Litvak, V., Gilbertson, T.P., & Brown P. (2007). Anticipatory changes in beta synchrony in the human corticospinal system and associated improvements in task performance. *European Journal of Neuroscience*, 25, 3758-65.

Rounis, E., **Yarrow, K.**, & Rothwell, J.C. (2007). Effects of rTMS conditioning over the fronto-parietal network on motor versus visual attention. *Journal of Cognitive Neuroscience*, 19, 513-524.

**Yarrow, K.**, Whiteley, L., Haggard, P., & Rothwell, J.C. (2006). Biases in the perceived timing of perisaccadic visual and motor events. *Perception and Psychophysics*, 68, 1217-26.

Brown, P., Chen, C.C., Wang, S., Kühn, A., Doyle, L., **Yarrow, K.**, Nuttin, B., Stein, J., & Aziz, T. (2006). Involvement of Human Basal Ganglia in Off-Line Feed-Back Control of Voluntary Movement. *Current Biology*, 16, 2129-34.

Kühn, A.A., Doyle, L., Pogosyan, A., **Yarrow, K.**, Kupsch, A., Schneider, G., Hariz, M.I., Trottenberg, T., & Brown, P. (2006). Modulation of beta oscillations in the subthalamic area during motor imagery in Parkinson's disease. *Brain*, 129, 695-706.

**Yarrow, K.**, Whiteley, L., Rothwell, J.C., & Haggard, P. (2006). Spatial consequences of bridging the saccadic gap. *Vision Research*, 46, 545-555.

Kühn, A.A., Hariz, M., Silberstein, P., Tisch, S., Kupsch, A., Schneider, G., Limousin-Dowsey, P., **Yarrow, K.**, & Brown, P. (2005). Activation of the subthalamic region during emotional processing in Parkinson's disease. *Neurology*, 65, 707-713.

Doyle, L.M.F., **Yarrow, K.**, & Brown, P. (2005). Lateralization of event-related beta desynchronization in the EEG during pre-cued reaction time tasks. *Clinical Neurophysiology*, 116, 1879-1888.

**Yarrow, K.**, Johnson, H., Haggard, P., & Rothwell, J.C. (2004). Consistent chronostasis effects across saccade categories imply a subcortical efferent trigger. *Journal of Cognitive Neuroscience*, 16, 839-847.

**Yarrow, K.**, Haggard, P., & Rothwell, J.C. (2004). Action, arousal, and subjective time. *Consciousness and Cognition*, 13, 373-390.

Kühn, A.A., Williams, D., Kupsch, A., Dowsey-Limousin, P., Hariz, M., Schneider, G.H., **Yarrow, K.**, & Brown, P. (2004). Event related beta desynchronization in human subthalamic nucleus correlates with motor performance. *Brain*, 127, 735-746.

Williams, D., Kühn, A., Kupsch, A., Tijssen, M., van Bruggen, G., Speelman, H., Hotton, G., **Yarrow, K.**, & Brown, P. (2003). Behavioural cues are associated with modulations of synchronous oscillations in the human subthalamic nucleus. *Brain*, 126, 1975-1985.

**Yarrow, K.** & Rothwell, J.C. (2003). Manual chronostasis: Tactile perception precedes physical contact. *Current Biology*, 13, 1134-1139.

Latash, M.L., **Yarrow, K.**, & Rothwell, J.C. (2003). Changes in finger coordination and responses to single pulse TMS of motor cortex during practice of a multifinger force production task. *Experimental Brain Research*, 151, 60-71.

**Yarrow, K.**, Haggard, P., Heal, R., Brown, P., & Rothwell, J.C. (2001). Illusory perceptions of space and time preserve cross-saccadic perceptual continuity. *Nature*, 414, 302-305.

**Yarrow, K.**, Brown, P., Gresty, M.A., & Bronstein, A.M. (2001). Force platform recordings in the diagnosis of primary orthostatic tremor. *Gait & Posture*, 13, 27-34.

Guerraz, M., Shaollo-Hoffmann, J., **Yarrow, K.**, Thilo, K.V., Bronstein, A.M., & Gresty, M.A. (2000). Visual control of postural orientation and equilibrium in congenital nystagmus. *Investigative Ophthalmology & Visual Science*, 41, 3798-3804.

Jauregui-Renaud, K., **Yarrow, K.**, Oliver, T., Gresty, M.A., & Bronstein, A.M. (2000). Effects of caloric stimulation on respiratory frequency and heart rate and blood pressure variability. *Brain Research Bulletin*, 53, 17-23.

### **Edited book chapters:**

**Yarrow, K.** (In press). Continuity of subjective temporal experience across eye movements: Temporal antedating following small, large and sequential saccades. In N. Srinivasan, B. R. Kar and J. Pandey (Eds.) *Advances in Cognitive Science: Volume 2*. New Delhi: Sage.

**Yarrow, K.**, Haggard, P. & Rothwell, J.C. (2010). Saccadic chronostasis and the continuity of subjective temporal experience across eye movements. In R. Nijhawan & B. Khurana (Eds.) *Space and time in Perception and action*. Cambridge: Cambridge University Press.

**Yarrow, K.** (2010). Temporal dilation: The chronostasis illusion and spatial attention.. In

A. C. Nobre and J Coull (Eds.) *Attention and Time*. Oxford: Oxford University Press.

### **Book reviews:**

**Yarrow, K.** (2005). Review of Mind time: The temporal factor in consciousness, by Benjamin Libet. *Journal of Psychophysiology*, 9, 232-233.

### **Invited talks and talks at symposia**

Yarrow, K. (2010, April). Mind time in a complex world. School of Psychology seminar, University of Queensland, Australia.

Yarrow, K. (2009, February). Active perception of multisensory temporal order. School of Optometry & Visual Sciences seminar, University of Bradford, U.K.

Yarrow, K. (2008, August). Multisensory integration and the judgement of temporal order. Royal Holloway brain & cognition seminar, U.K.

Yarrow, K. (2008, February). Temporal perception in action. Warwick University PsychSoc meeting, Cumberland Lodge, U.K.

Yarrow, K. (2006, December). The stopped clock illusion and visual continuity across eye movements. Second International Conference on Cognitive Science, Allahabad, India.

Yarrow, K. (2006). The stopped clock illusion and visual continuity across eye movements. Neuro-otology unit seminar, Imperial College London, U.K.

Yarrow, K. (2006). The stopped clock illusion and visual continuity across eye movements. Functional Imaging Lab seminar, Institute of Neurology, U.K.

Yarrow, K. (2005). The stopped clock illusion and visual continuity across eye movements. Royal Holloway brain & cognition seminar, U.K.

Yarrow, K. (2004, 2005). What can illusions tell us about motor control? IMN clinical series, Institute of Neurology, U.K.

Yarrow, K., Haggard, P., Johnson, H. & Rothwell, J.C. (2003, May). Voluntary and reflexive movements influence subsequent temporal perception. European Workshop on Movement Science, Münster, Germany.

Yarrow, K. (2002). Temporal illusions subsequent to movement. Psychology departmental seminar, University of Nottingham, U.K.

### **Conference presentations**

Yarrow, K. (2010, April). Timing of Broken Intervals: Implications for an internal clock. 37<sup>th</sup> Australasian Experimental Psychology Conference, Melbourne, Australia.

Jahn, N. & Yarrow, K. (2009, July). In search of an efferent rule in multisensory binding. International Multisensory Research Forum 10<sup>th</sup> Annual Meeting, New York, U.S.A.

Ley, I., Haggard, P. & Yarrow, K. (2008, July). Optimal integration of auditory and vibrotactile information for judgements of temporal order. International Multisensory Research Forum 9<sup>th</sup> Annual Meeting, Hamburg, Germany.

Yarrow, K. & Ley, I. (2008, January). Optimal integration of auditory and vibrotactile information for judgements of temporal order. Experimental Psychology Society meeting, London, U.K.

- Yarrow, K., Haggard, P. & Rothwell, J.C. (2006, August). An extended perceived duration for multiple post-saccadic visual objects. 29<sup>th</sup> European Conference on Visual Perception, St. Petersburg, Russia.
- Yarrow, K. (2006, June). Vibrotaction enhances perceived auditory volume at a post-perceptual level. International multisensory research forum, 7<sup>th</sup> annual meeting, Dublin, Ireland.
- Yarrow, K., Ferro, D., Rothwell, J.C. & Haggard, P. (2006, June). An extended perceived duration for multiple post-saccadic visual objects. Association for the Scientific Study of Consciousness, 10<sup>th</sup> gathering, Oxford, U.K.
- Yarrow, K. (2005, July). Antedating of saccade targets. Joint meeting of the Experimental Psychology Society and the Canadian Society for Brain, Behaviour and Cognitive Science, Montreal, Canada.
- Yarrow, K. (2005, June). Antedating of saccade targets. Association for the Scientific Study of Consciousness, 9<sup>th</sup> gathering, Pasadena, U.S.A.
- Yarrow, K., Whiteley, L., Rothwell, J.C. & Haggard, P. (2004, December). Reconstructed spatiotemporal perception following a saccade towards a moving object. British Oculomotor group meeting, London, U.K.
- Yarrow, K., Whiteley, L., Haggard, P. & Rothwell, J.C. (2004, October). Temporal antedating of saccade targets. BPS perception & Action Seminar, Birmingham, U.K.
- Yarrow, K., Whiteley, L., Haggard, P. & Rothwell, J.C. (2004, August). Dissociable temporal and spatial perceptions following saccadic eye movements. 27<sup>th</sup> European Conference on Visual Perception, Budapest, Hungary.
- Yarrow, K., Whiteley, L., Haggard, P. & Rothwell, J.C. (2004, June/July). Dissociable temporal and spatial perceptions following saccadic eye movements. Experimental Psychology Society meeting, Lancaster, U.K.
- Yarrow, K. (2003, October). Generality of the saccadic chronostasis illusion. NTT-UCL Joint Workshop on Human Information Processing 2003, Kyoto, Japan.
- Yarrow, K., Haggard, P., Heal, R., Brown, P. & Rothwell, J.C. (2002, December). Illusory perceptions of space and time preserve cross-saccadic perceptual continuity. British Oculomotor group meeting, London, U.K.
- Yarrow, K. (2002, August). Illusory perceptions of space and time preserve cross-saccadic perceptual continuity. Visual localization in Space-Time 2002, Brighton, U.K.
- Yarrow, K., Haggard, P., Heal, R., Brown, P. & Rothwell, J.C. (2002, April). Illusory perceptions of space and time preserve cross-saccadic perceptual continuity. Joint meeting of the Experimental Psychology Society and the Belgian Psychological Society, Leuven, Belgium.
- Yarrow, K., Haggard, P., Heal, R., Brown, P. & Rothwell, J.C. (2001, September). Space-time constancy in human perception. Second Varna Conference on Motor Control MCC2001, Varna, Bulgaria.

**Referees available on request**