

# Kielan Nicholas Yarrow PhD

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## **EDUCATION**

**2002 PhD** Institute of Neurology, UCL

**1998 MSc** UCL. Experimental Methods in Psychology. Distinction.

**1997 BSc** Keele University. BSc History & Psychology joint honours. 1<sup>st</sup> Class.

## **EMPLOYMENT**

### **Continuing / with Tenure:**

**2015-present. Reader.** Dept. of Psychology, City, University of London.

**2011- 2015. Senior Lecturer.** Dept. of Psychology, City University London.

**2006- 2011. Lecturer.** Dept. of Psychology, City University London.

### **Fixed-term:**

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

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

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

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

**PUBLICATIONS****Peer-reviewed journal articles:**

1. Saurels, B.W., Johnston, A., **Yarrow, K.**, Arnold, D.H. (2024). Event probabilities have a different impact on early and late electroencephalographic measures regarded as metrics of prediction. *Journal of Cognitive Neuroscience*, 36, 187-199.
2. **Yarrow, K.**, Solomon, J.A., Arnold, D.H., Roseboom, W. (2023). The best fitting of three contemporary observer models reveals how participants' strategy influences the window of subjective synchrony. *Journal of Experimental Psychology: Human Perception & Performance*, 49, 1534-1563.
3. Arnold, D.H., Johnston, A., Adie, J., & **Yarrow, K.** (2023). On why we lack confidence in some signal-detection-based analyses of confidence. *Consciousness & Cognition*, 113:103532.
4. Saurels, B.W., **Yarrow, K.**, Lipp, O.V. & Arnold, D.H. (2023). The temporal visual oddball effect is not caused by repetition suppression. *Attention, Perception & Psychophysics*, 85, 1755-1760.
5. Silas, J., Jones, A., **Yarrow, K.**, & Anderson, W. (2023). Spatial attention is not affected by alpha or beta transcranial alternating Current Stimulation: A registered report. *Cortex*, 164, 33-50.
6. Saurels, B.W., Arnold, D.H., Anderson, N.L., Lipp, O.V., & **Yarrow, K.** (2022). The perceived duration of expected events depends on how the expectation is formed. *Attention, Perception & Psychophysics*, 84(5), 1718-1725.
7. Tapper, K., **Yarrow, K.**, Farrar, S.T., Mandeville, K.L. (2022). Effects of calorie labelling and contextual factors on hypothetical coffee shop menu choices, *Appetite*, 172, 105963.
8. **Yarrow, K.**, Kohl, C, Segasby, T., Kaur Bansal, R., Rowe, P., & Arnold, DH (2022). Neural-latency noise places limits on human sensitivity to the timing of events. *Cognition*, 222, 105012.
9. Hohaia W., Saurels B.W., Johnston A, Yarrow K, Arnold D.H (2022). Occipital alpha-band brain waves when the eyes are closed are shaped by ongoing visual processes. *Scientific Reports*, 12(1), 1194.
10. Saurels, B. W., Frommelt, T., **Yarrow, K.**, Lipp, O. V. & Arnold, D. H. (2022). Neural prediction errors depend on how an expectation was formed. *Cortex*, 147, pp. 102-111.
11. Saurels, B.W., Hohaia, W., **Yarrow, K.**, Johnston, A., & Arnold, D.H. (2021). Visual predictions, neural oscillations and naïve physics. *Scientific Reports*, 11 (1), 16127.
12. Rowe, P.J., Haenschel, C., Khachatoorian, N., & **Yarrow, K.** (2020). Post-stroke object affordances: An EEG investigation. *Brain & Cognition*, 146:105639.
13. **Yarrow, K.**, Samba, C., Kohl, C. & Arnold, D.H. (2021). Auditory and visual durations load a unitary working-memory resource. *Timing & Time Perception*, 9, 1-38.
14. Kohl, C., Spieser, L., Forster, B., Bestmann, S., & **Yarrow, K.** (2020). Centroparietal activity mirrors the decision variable when tracking biased and time-varying sensory evidence. *Cognitive Psychology*, 122, 101321.

15. Farrar, S.T., **Yarrow, K.** & Tapper, K. (2020). The Effect of Mindfulness on Cognitive Reflection and Reasoning. *Mindfulness*, 11, 2150–2160.
16. Ioakeimidis, V., Haenschel, C., **Yarrow, K.**, Kyriakopoulos, M., Dima, D. (2020). A meta-analysis of structural and functional brain abnormalities in early-onset schizophrenia. *Schizophrenia Bulletin Open*, 1, 1, sgaa016.
17. Arnold, D.H., Hohaia, W. & **Yarrow, K.** (2020). Neural correlates of subjective timing precision and confidence. *Scientific Reports*, 10, 3098.
18. Saurels, B.W., Lipp, O.V., **Yarrow, K.** & Arnold, D.H. (2020). Predictable events elicit less visual and temporal information uptake in an oddball paradigm. *Attention, Perception & Psychophysics*, 82, 1074-1087.
19. Jalali, S., Martin, S.E., Ghose, T., Buscombe, R.M., Solomon, J.A., & **Yarrow, K.** (2019). Information accrual from the period preceding racket-ball contact for tennis ground strokes: Inferences from stochastic masking. *Frontiers in Psychology*, 10:1969.
20. Gorst, T., Freeman, J., **Yarrow, K.**, & Marsden, J. (2019). Assessing planter sensation in the foot using the FFoot Roughness Discrimination Test (FoRDT™): A reliability and validity study in stroke. *PM&R*, 11, 1083-1092.
21. Mandeville, K.L., Barker, R., Packham, A., Sowerby, C., **Yarrow, K.**, & Patrick, H. (2019). Financial interests of patient organisations contributing to technology appraisal at England's National Institute for Health and Care Excellence (NICE): a policy review. *BMJ*, 364, k5300.
22. Gorst, T., Freeman, J., **Yarrow, K.**, & Marsden, J. (2020). Assessing lower limb position sense in stroke using the Gradient Discrimination Test (GradDT™) and Step-height Discrimination Test (StepDT™): a reliability and validity study. *Disability & Rehabilitation*, 42, 2215-2223.
23. Hadar, A.A., Lazarovits, A., & **Yarrow, K.** (2019). Increased Motor Cortex Excitability for Concealed Visual Information. *Journal of Psychophysiology*, 33, 286-295.
24. Kohl, C., Spieser, L., Forster, B. Bestmann, S, & **Yarrow, K.** (2019). The Neurodynamic decision variable in human multi-alternative perceptual choice. *Journal of Cognitive Neuroscience*, 31, 262-277.
25. Jalali, S., Martin, S.E., Murphy, C.P., Solomon, J.A., & **Yarrow, K.** (2018). Classification videos reveal the visual information driving complex real-world speeded decisions. *Frontiers in Psychology*, 9:2229.
26. Mandeville, K.L., Satherley, R.M., Hall, J., Sutaria, S., Willot, C., **Yarrow, K.**, Mohan, K., Wolfe, I., & Devakumar, D. (2018). The political views of doctors in the United Kingdom: a cross-sectional study. *Journal of Epidemiology & Community Health*, 72, 880-887.
27. Spieser, L., Kohl, C., Forster, B. Bestmann, S, & **Yarrow, K.** (2018). Neurodynamic Evidence Supports a Forced-Excursion Model of Decision-Making under Speed/Accuracy Instructions. *eNeuro*, 5, 0159-18.2018.
28. Ball, D.M., Arnold, D.H. & **Yarrow, K.** (2017). Weighted integration suggests that visual and tactile signals provide independent estimates about duration. *Journal of Experimental Psychology: Human Perception & Performance*, 43, 868-880.
29. Rowe, P., Haenschel, C., Kosilo, M. & **Yarrow, K.** (2017). Objects rapidly prime the

- motor system when located near the dominant hand. *Brain & Cognition*, 113, 102-108.
30. Hadar, A.A., Rowe, P., Di Costa, S., Jones, A., & **Yarrow, K.** (2016). Motor-evoked potentials reveal a motor-cortical readout of evidence accumulation for sensorimotor decisions. *Psychophysiology*, 53, 1721-1731.
  31. **Yarrow, K.**, Martin, S.E., Di Costa, S., Solomon, J.A., & Arnold, D.H. (2016). A roving dual-presentation simultaneity-judgment task to estimate the point of subjective simultaneity. *Frontiers in Psychology*, 7:416.
  32. Merchant, H., & **Yarrow, K.** (2016). How the motor system both encodes and influences our sense of time. *Current Opinion in Behavioral Sciences*, 8, 22-27.
  33. Keane, B., Spence, M., **Yarrow, K.**, & Arnold, D.H. (2015). Perceptual confidence demonstrates trial-by-trial insight into the precision of audio-visual timing encoding. *Consciousness & Cognition*, 38, 107-117.
  34. **Yarrow, K.**, Minaei, S., & Arnold, D.H. (2015). A model-based comparison of three theories of audiovisual temporal recalibration. *Cognitive Psychology*, 83, 54-76.
  35. Arnold, D.H., Petrie, K., Gallagher, R. & **Yarrow, K.** (2015). An object-centered aftereffect of a latent material property: A squishiness visual aftereffect, not causality adaptation. *Journal of Vision*, 15(9):4.
  36. Shankleman, M., Sykes, C., Mandeville, K.L., Di Costa, S. & **Yarrow, K.** (2015). Standardised (plain) cigarette packaging increases attention to both text-based and graphical health warnings: Experimental evidence. *Public Health*, 129, 37-42.
  37. Narkiewicz, M., Lambrechts, A., Eichelbaum, F. & **Yarrow, K.** (2015). Humans don't time sub-second intervals like a stopwatch. *Journal of Experimental Psychology: Human Perception & Performance*, 41, 249-263.
  38. Tretyak, V. & **Yarrow, K.** (2014). Motor plans persist to influence subsequent actions with four or more response alternatives. *Acta Psychologica*, 149, 9-17.
  39. Mandeville K.L., O'Neill S., Brighthouse A., Walker A., **Yarrow K.** & Chan K. (2014). Academics and competing interests in H1N1 influenza media reporting. *Journal of Epidemiology and Community Health*, 68, 197-203.
  40. Herrojo Ruiz, M., Huebl, J., Schöneck, T., Kupsch, A., **Yarrow, K.**, Krauss, J.K., Schneider, G., & Kühn, A.A. (2014). Involvement of human internal globus pallidus in early modulation of cortical error-related activity. *Cerebral Cortex*, 24, 1502-17
  41. Makris, S., Hadar, A.A. & **Yarrow, K.** (2013). Are object affordances fully automatic? A case of covert attention. *Behavioral Neuroscience*, 127, 797-802.
  42. Makris, S., Grant, S., Hadar, A.A. & **Yarrow, K.** (2013). Binocular vision enhances a rapidly evolving affordance priming effect: behavioural and TMS evidence. *Brain and Cognition*, 83, 279-287.
  43. **Yarrow, K.**, Sverdrup-Stueland, I., Roseboom, W. & Arnold, D.H. (2013). Sensorimotor temporal recalibration within and across limbs. *Journal of Experimental Psychology: Human Perception & Performance*, 39, 1678-1689.
  44. Arnold, D.H., Nancarrow, K. & **Yarrow, K.** (2012). The critical events for motor-sensory temporal recalibration. *Frontiers in Human Neuroscience*, 6, 235:1-6.
  45. Hadar, A.A., Makris, S., & **Yarrow, K.** (2012). The truth-telling motor cortex: Response competition in M1 discloses deceptive behaviour. *Biological Psychology*, 89, 495-

502.

46. Brücke, C., Huebl, J., Schönecker, T., Neumann, W., **Yarrow, K.**, Kupsch, A., Blahak, C., Lütjens, G., Brown, P., Krauss, J.K., Schneider, G., & Kühn, A.A. (2012). Scaling of movement is related to pallidal gamma oscillations in patients with dystonia. *Journal of Neuroscience*, 32, 1008-19.
47. **Yarrow, K.**, Jahn, N., Durant, S., & Arnold, D.H. (2011). Shifts of criteria or neural timing? The assumptions underlying timing perception studies. *Consciousness & Cognition*, 20, 1518-31.
48. Makris, S., Hadar, A.A., **Yarrow, K.** (2011). Viewing objects and planning actions: On the potentiation of grasping behaviours by visual objects. *Brain and Cognition*, 77, 257-264.
49. **Yarrow, K.**, Roseboom, W. & Arnold, D.H. (2011). Spatial grouping resolves ambiguity to drive temporal recalibration. *Journal of Experimental Psychology: Human Perception & Performance*, 37, 1657-61.
50. Huebl, J., Schoenecker, T., Siebert, S., Brücke, C., Schneider, G., Kupsch, A., **Yarrow, K.** & Kühn, A.A. (2011). Modulation of subthalamic alpha activity to emotional stimuli correlates with depressive symptoms in PD. *Movement Disorders*, 26, 477-83.
51. Arnold, D.H. & **Yarrow, K.** (2011). Temporal recalibration of vision. *Proceedings of the Royal Society B: Biological Sciences*, 278, 535-8.
52. 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.
53. **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.
54. 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.
55. **Yarrow, K.**, Haggard, P., & Rothwell, J.C. (2008). Vibrotactile-auditory interactions are post-perceptual. *Perception*, 37, 1114-30.
56. 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.
57. 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.
58. 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.

59. 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.
60. **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.
61. 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.
62. 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.
63. **Yarrow, K.**, Whiteley, L., Rothwell, J.C., & Haggard, P. (2006). Spatial consequences of bridging the saccadic gap. *Vision Research*, 46, 545-555.
64. 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.
65. 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.
66. **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.
67. **Yarrow, K.**, Haggard, P., & Rothwell, J.C. (2004). Action, arousal, and subjective time. *Consciousness and Cognition*, 13, 373-390.
68. 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.
69. 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.
70. **Yarrow, K.** & Rothwell, J.C. (2003). Manual chronostasis: Tactile perception precedes physical contact. *Current Biology*, 13, 1134-1139.
71. 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.
72. **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.
73. **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.
74. 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.
75. 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:**

1. **Yarrow, K.** (2018). Collecting and Interpreting Judgments about Perceived Simultaneity: A Model-Fitting Tutorial. In A. Vatakis, F. Balci, M. Di Luca, Á. Correa (Eds.) *Timing and Time Perception: Procedures, Measures, and Applications*. Leiden: Brill.
2. **Yarrow, K.** & Arnold, D.H. (2016). The timing of experiences: How far can we get with simple brain-time models? In B. Mölder, V. Arstila and P. Øhrstrøm (Eds.) *Philosophy and Psychology of Time*. Dordrecht: Springer.
3. **Yarrow, K.** & Obhi, S.S. (2014). Temporal perception in the context of action. In V. Arstila and D. Lloyd (Eds.) *Subjective Time: The Philosophy, Psychology, and Neuroscience of Temporality*. Cambridge, MA: MIT Press.
4. **Yarrow, K.** (2010). 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.
5. **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.
6. **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, comments, letters to the editor etc:**

1. **Yarrow, K.** (2017). Assessing Risk Factors for Athletic Excellence. *Progress in Brain Research*, 232, 141-144.
2. Hadar, A., Makris, S., & **Yarrow, K.** (2012). Single-pulse TMS related syncopal spell in a healthy subject. *Brain Stimulation*, 5, 652-3.
3. **Yarrow, K.** (2005). Review of “Mind time: The temporal factor in consciousness”, by Benjamin Libet. *Journal of Psychophysiology*, 9, 232-233.

**RESEARCH GRANTS, AWARDS AND PRIZES**

2018-2020 ARC (Australian Research Council) Discovery Grant (partner investigator; with chief investigator Derek Arnold, University of Queensland): “Why does time seem to drag or fly?” A\$199,412.

2015 Experimental Psychology Society (EPS) Undergraduate Research Bursary (as supervisor). £1600.

2015-16 Physiotherapy Research Foundation (external co-investigator, with Gorst T, Freeman J, & Marsden J): The development of somatosensory discrimination tests in the lower limb following stroke. £19,914.

**November 2014-October 2017 Leverhulme Trust Research Project Grant (principle investigator; with co-investigators Tina Forster and Sven Bestmann): “Novel neurometric measures to discriminate models of speeded decision making.” £216,306.**

January 2014-December 2016 ARC (Australian Research Council) Discovery Grant (partner investigator; with chief investigator Derek Arnold, University of Queensland): “Distorted Time Perceptions: Altered neural coding or decisional criteria?” A\$163,000.

**November 2013-October 2016 BBSRC Project Grant (principle investigator; with co-investigator Joshua Solomon): “New methodologies to explain and improve the expert anticipatory advantage in sports decision making.” £469,644.**

2011 City University Learning Development Project (co-applicant): “Programming for Data Collection: A new Module for Postgraduate and Undergraduate Students.” £2000.

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.

2009 University of Queensland Travel Award. ~£800.

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.

1994-2002 Various student prizes & travel grants.



## **PRESENTATIONS**

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

Yarrow, K. (2023, April). Probing the neurodynamics of speeded choice. School of Psychological and Cognitive Sciences seminar, Peking University, Beijing, China.

Yarrow, K. (2019, June). Interrogating the corticospinal tract with a dual-MEP approach. Laboratoire de Neurosciences Cognitives seminar, Aix Marseille Université, France.

Yarrow, K. (2017, February). Can classification videos reveal the information used to respond to an opponent's tennis stroke? Department of Psychology Seminar, Technical University of Kaiserslautern, Germany.

Yarrow, K. (2015, January). Latency models of audiovisual timing: SDT in a temporal context. Visual Statistics in Humans and Machines (EPSRC Network for Biological and Computer Vision mini workshop), London, U.K.

Yarrow, K. (2014, November). Relative time and its recalibration: Models and data. British Neuropsychological Society (BNS) Autumn meeting, London, U.K.

Yarrow, K. (2014, October). Perceiving time: From high-level illusions to low-level models. Centre for Visual Cognition (CVC) seminar, University of Southampton, U.K.

Yarrow, K. (2014, July). Assessing proposed explanations of audio-visual temporal recalibration. 10<sup>th</sup> Asia Pacific Conference on Vision (APCV 2014), Takamatsu, Japan.

Yarrow, K. (2013, August). Timing of experiences. Timely (COST Action) Workshop "The philosophy and psychology of time: continuity, presence and the timing of experience", Turku, Finland.

Yarrow, K. (2013, March). Plans for action in primary motor cortex revealed using transcranial magnetic stimulation. Presentation to the Behavioral Neurology Unit, National Institute for Neurological Disorders and Stroke, NIH, Bethesda, MD, U.S.A.

Yarrow, K. (2012, November). Plans for action in primary motor cortex revealed using transcranial magnetic stimulation. Psychology Department seminar, Goldsmiths, University of London, U.K.

Yarrow, K. (2012, October). Mechanisms of recalibration for temporal event perception. Timely (COST Action) Workshop "Temporal processing within and across senses", Tübingen, Germany.

Yarrow, K. (2012, February). The temporal evolution of intra-hemispheric plans for action in human motor cortex. Institute of Movement Neuroscience seminar, ION/ICN, UCL. U.K.

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 (as presenter):**

Yarrow, K., Solomon, J.A., Arnold, D.H., Roseboom, W. (2023, August). Bayesian multilevel modelling of simultaneity judgements discriminates between observer models and reveals how participants' strategy influences the window of subjective synchrony. 45<sup>th</sup> European Conference on Visual Perception (ECVP), Paphos, Cyprus. *Poster*.

Yarrow, K., Samba, C., Kohl, C., Arnold, D.H. (2019, August). Auditory and visual durations load a unitary working-memory resource. 42<sup>nd</sup> European Conference on Visual Perception (ECVP), Leuven, Belgium. *Poster*.

Yarrow, K., Jones, I., Johnson, A., Arnold, D. (2019, August). Perceived time and the accrual of visual information. Asia-Pacific Conference on Vision (APCV), Osaka, Japan. *Talk*.

Yarrow, K., Kohl, C., Spieser, L., Forster, B., Bestmann, S. (2018, May). The Neurodynamic Decision Variable in Human Multi-Alternative Perceptual Choice. Vision Science Society annual meeting (VSS), St. Pete Beach, Florida, U.S.A. *Poster*.

Yarrow, K., Kohl, C., Spieser, L., Forster, B., Bestmann, S. (2017, August). Are human neurometric signals consistent with sequential sampling models of speeded choice? 40<sup>th</sup> European Conference on Visual Perception (ECVP), Berlin, Germany. *Talk*.

Yarrow, K., Ball, D., & Arnold, D. (2017, January). Integration of visual and tactile information during interval timing: Implications for internal clocks. Modularity in Time Perception and Time Behaviour, EPS Workshop, Liverpool, U.K. *Talk*.

Yarrow, K., Ball, D., & Arnold, D. (2016, August). Integration of visual and tactile information during interval timing: Implications for internal clocks. 39<sup>th</sup> European

Conference on Visual Perception (ECVP), Barcelona, Spain. *Talk*.

Yarrow, K., Hadar, A.A., Rowe, P., Di Costa, S., & Jones, A. (2015, May). Motor-evoked potentials reveal a motor-cortical readout of evidence accumulation for sensorimotor decisions. Vision Science Society annual meeting (VSS), St. Pete Beach, Florida, U.S.A. *Poster*.

Yarrow, K., Minaei, S., & Arnold, D. (2014, July). A model-based comparison of three theories of audiovisual temporal recalibration. 12<sup>th</sup> International Conference on Cognitive Neuroscience (ICON) 2014, Brisbane, Australia. *Poster*.

Yarrow, K., Minaei, S., & Arnold, D. (2014, June). A model-based comparison of three theories of audiovisual temporal recalibration. International Multisensory Research Forum (IMRF) 2014, Amsterdam, the Netherlands. *Talk*.

Yarrow, K., Shapiro, S., Di Costa, S., & Arnold, D. (2014, June). A 2AFC simultaneity-judgment task to estimate the point of subjective simultaneity. International Multisensory Research Forum (IMRF) 2014, Amsterdam, the Netherlands. *Poster*.

Yarrow, K., Shapiro, S., Di Costa, S., & Arnold, D. (2014, April). A 2AFC simultaneity-judgment task to estimate the point of subjective simultaneity. International Conference on Timing and Time Perception, Corfu, Greece. *Talk*.

Yarrow, K., Lambrechts, A., & Narkiewicz, M. (2013, May). Humans don't time short intervals like a stopwatch. 25<sup>th</sup> Association for Psychological Science (APS) Annual Convention, Washington DC, U.S.A. *Poster*.

Yarrow, K., Sverdrup-Stueland, I., Roseboom, W., & Arnold, D. H. (2013, April). Sensorimotor temporal recalibration within and across limbs. 40<sup>th</sup> Australasian Experimental Psychology Conference, Adelaide, Australia. *Talk*.

Yarrow, K., Sverdrup-Stueland, I., & Arnold, D. H. (2012, June). Sensorimotor temporal recalibration within and across limbs. International Multisensory Research Forum 13<sup>th</sup> Annual Meeting, Oxford, U.K. *Talk*.

Yarrow, K., Eichelbaum, F. & Lambrechts, A. (2011, January). Humans don't time intervals like a stopwatch. Experimental Psychology Society meeting, London, U.K. *Talk*.

Yarrow, K., Roseboom, W. & Arnold, D.H. (2011, January). Spatial grouping resolves ambiguity to drive temporal recalibration. Experimental Psychology Society meeting, London, U.K. *Poster*.

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

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. *Poster*.

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. *Poster*.

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. *Talk*.

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. *Poster*.

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. *Poster*.

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. *Poster*.

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. *Poster*.

Yarrow, K. (2005, June). Antedating of saccade targets. Association for the Scientific Study of Consciousness, 9<sup>th</sup> gathering, Pasadena, U.S.A. *Poster*.

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. *Poster*.

Yarrow, K., Whiteley, L., Haggard, P. & Rothwell, J.C. (2004, October). Temporal antedating of saccade targets. BPS perception & Action Seminar, Birmingham, U.K. *Poster*.

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. *Talk*.

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. *Talk*.

Yarrow, K. (2003, October). Generality of the saccadic chronostasis illusion. NTT-UCL Joint Workshop on Human Information Processing 2003, Kyoto, Japan. *Talk*.

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. *Poster*.

Yarrow, K. (2002, August). Illusory perceptions of space and time preserve cross-saccadic perceptual continuity. Visual localization in Space-Time 2002, Brighton, U.K. *Poster*.

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. *Talk*.

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. *Talk*.

**Conference presentations (author but not presenting):**

Quite a few, but life's too short to keep track.

**TEACHING EXPERIENCE AND SUPERVISION****PhD supervision (as primary supervisor):**

Stergios Makris, 2008-2012 (graduated January 2013).

Aviad Hadar, 2009-2013 (graduated January 2014).

Marta Narkiewicz, 2010-2017 (graduated July 2018).

Paula Rowe, 2013-2018 (graduated January 2019)

Carmen Kohl, 2014-2017 (graduated January 2018).

**PhD examination:**

External examiner: Darren Rhodes (Birmingham, 2015); Corinne Fulcher (Bradford, 2017); Sarah Maddison (Nottingham, 2018); Aysha Motala (Cardiff, 2019).

Internal examiner (University of London): Xavier Job (Goldsmiths, 2018).

Internal examiner (City): Chiara Sambo (2009); Esha Massand (2011); James Fowler (2011); Alex Jones (2012); Alberta Ipser (2014); Alejandro Galvez Pol (2017); Ramiro Joly-Mascheroni (2019); Prince Kouassi (2022).

**External contributions:**

External examiner, MRes Psychology programme (Sussex University), 2010/11-2013/14.

**Teaching at City, University of London****Undergraduate:**

PS2003 (Cognitive Psychology II), half of module, 2006/7-2008/9.

PS2004 (Biological Psychology), entire module, 2006/7-2011/12, half of module, 2012/13-2014/15. 2023/24-.

PS3019 (Topics in Cognitive Neuroscience), half of module, 2008/9, 2010/11-2011/12.

PS3025 (Computing for Psychologists), 3-4 lectures, 2011/12-2019/20.

Supervision of ~80 BSc Psychology final-year projects, 2006/7-2020/21.

**Postgraduate:**

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

PSM500 (Preliminary Research Proposal), 2010/11-2011/12, 2013/14.

SGM248 (Collecting Data), single lecture, 2013/14.

PSM207 (Research Methods & Programming), majority of module, 2015/16-2020/21, 2023/4-.

PSM208 (Statistical Models), entire module, 2015/16-2020/21.

PSM403 (Research Design & Statistics), two lectures, 2015/16.

SAM003 (Introduction to Quantitative Inference), entire module, 2016/17-2020/21.

SAM001 & PEM207 (Both research methods modules), guest lecture, 2018/19-2019/20.

PEM105 (Experimental economics & game theory), three lectures, 2020/21.

Supervision of ~8 MSc projects, 2008/9, 2015/16-2020/21.

**Training & Recognition:**

Introductory certificate in teaching in higher education, 2007.

Nominated for “Student Voice” teaching award, 2008/9, 2009/10, 2010/11.

Moodle (virtual learning environment) showcase winner, 2010/11.

Moodle (virtual learning environment) launch award, 2010/11 (£1000).

**Teaching at UCL****Undergraduate:**

Various degrees of contribution to:

B002 (Methods and approaches in Psychology), 2003/4.

B222 (Biological basis of behaviour), 2003/4, 2005/6.

B224 (Perception, attention and action), 2003/4-2005/6.

C567 (Topics in Neurobiology), 2003/4.

**PROFESSIONAL SERVICE / ADMINISTRATION****University service:**

Co-chair, Psychology Dept. Research Ethics Committee, 2023/24-.

Deputy programme director, MSc Clinical, Social & Cognitive Neuroscience, 2023.

Psychology Dept. research (R.E.F.) lead, 2011-12, 2017-2021.

Programme director, MSc Research Methods with Psychology, 2014/15-2020/21.

Year 3 tutor, BSc Psychology, 2013/14-2018/19.

Programme director, MSc Research Methods and Psychology, 2010/11-2013/14.

Deputy programme director, BSc Psychology, 2010/11-11/12.

Admissions tutor, BSc Psychology, 2008/9-2009/10.

Membership of various committees at various times, e.g. Psychology Dept. Research Committee, Psychology Dept. Research Ethics Committee, School of Arts & Social Sciences (SASS) Programme Approval and Review Committee, SASS Research & Enterprise committee, SASS Research working group, University Research Governance & Integrity committee.

**Editorial work:**

Associate Editor of Perception Science (specialty section of *Frontiers in Psychology* and *Frontiers in Neuroscience*), 2017- .

**Ad hoc reviews completed for the following journals:**

Autism.

Acta Psychologica.

Attention, Perception & Psychophysics.

Brain Research.

Cerebral Cortex.

Cognition.

Cognition & Emotion.

Cognitive Science.

Consciousness & Cognition.

Cortex.

Current Biology.

eLife

Experimental Brain Research.

Frontiers in Neuroscience.

Frontiers in Psychology.

Journal of Cognitive Neuroscience.

Journal of Experimental Psychology: Human Perception and Performance.

Journal of Eye Movement Research.

Journal of Health Psychology.

Journal of Mathematical Psychology.



Journal of Neurophysiology.  
Journal of Neuroscience.  
Journal of the Acoustical Society of America.  
Journal of the Royal Society of Medicine.  
Journal of Vision.  
Neuroscience Letters.  
Perception.  
PLoS Biology.  
PLoS ONE.  
PNAS.  
Proceedings of the Royal Society B: Biological Sciences.  
Psychological Science.  
Quarterly Journal of Experimental Psychology.  
Scientific Reports.  
Timing and Time Perception Reviews.  
Vision Research.

**Grant and other reviewing activities:**

Grant application reviewer for NSF (National Science Foundation)  
Grant application reviewer for BBSRC (Biotechnology & Biological Sciences Research Council).  
Grant application reviewer for ESRC (Economic & Social Research Council).  
Referee (“rapporteur”) on end of award assessments for ESRC.  
Grant application reviewer for NIHR (National Institute of Health Research).  
Grant application reviewer for British Academy / Leverhulme Trust.  
Fellowship application reviewer for the Wellcome Trust.  
Reviewer for Research Priority Unit funding competition, German Sport University (DSHS Cologne).  
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-.  
V.S.S. (Vision Science Society), 2015, 2018.  
A.P.S. (Association for Psychological Science), 2011-2013.  
Member (working groups 1 & 4) of COST (European cooperation in the field of scientific and technical research) action TD0904, “TIMELY: Time In MEntaL activitY” (2010-2014).  
Association for the Scientific study of Consciousness, 2004-2006.

**Referees available on request**