

- Senior Research Scientist and Clinical Systems Director, National Center for Adaptive Neurotechnologies (NCAN), Stratton VA Medical Center, Albany, NY, USA.
- Affiliate Professor, Electrical & Computer Engineering Department, State University of New York at Albany, NY, USA.

Education and Training

INSTITUTION AND LOCATION	DEGREE	END DATE	FIELD OF STUDY
University of Oxford, Oxford, UK	B. A.	06/1995	Experimental Psychology
University of Oxford, Oxford, UK	M. A.	03/2002	Experimental Psychology
University of Oxford, Oxford, UK	D. Phil.	03/2002	Experimental Psychology; Statistics
Max Planck Institute for Biological Cybernetics, Tübingen, Germany	Postdoctoral Fellow	12/2004	Machine Learning

Positions, Scientific Appointments, and Honors

Positions and Employment

2021 -	Affiliate Professor, Electrical & Computer Engineering Dept., State University of New York at Albany
2020 -	Senior Research Scientist, National Center for Adaptive Neurotechnologies, Albany, NY
2015 - 2020	Director of Neurotechnology, Blythedale Children's Hospital, Valhalla, NY
2014 - 2020	Research Scientist, Burke Medical Research Institute, White Plains, NY
2013 - 2016	Founding Editor-in-Chief (jointly with C.S. Nam), Taylor Francis journal "Brain Computer Interfaces"
2010 - 2014	Research Scientist II, Wadsworth Center, New York State Dept. of Health, Albany, NY
2010 - 2014	Project Coordinator for the BCI2000 Project, Wadsworth Center, New York State Dept. of Health, Albany, NY
2005 - 2010	Senior Research Scientist, Max Planck Institute for Biological Cybernetics, Tübingen
2002 - 2004	Research Scientist, Max Planck Institute for Biological Cybernetics, Tübingen
1996 - 2002	Doctoral student, Department of Experimental Psychology, University of Oxford
1995 - 2002	Research Assistant, Department of Experimental Psychology, University of Oxford

Other Experience and Professional Memberships

2016 -	Founder member, BCI Society
2016 -	Invited Lecturer on 2016, 2017 and 2019 NCAN Short Course in Adaptive Neurotechnologies, National Center for Adaptive Neurotechnologies
2013 - 2013	External reviewer for grant application, Netherlands Organization for Scientific Research (NWO)
2012 - 2012	External reviewer for grant application, King Abdullah University of Science and Technology
2011 - 2011	Invited guest lecturer on the course "Introduction to Brain-Computer Interfacing" for Bachelor

- and Masters students, Radboud University Nijmegen, The Netherlands
- 2011 - Member, Society for Neuroscience
- 2010 - 2013 Program Committee Member, Fourth International Brain-Computer Interface Meeting (Pacific Grove, CA, 2010)—also, workshop coordinator at both the fourth (2010) and fifth (2013) meetings
- 2009 - 2013 Invited lecturer, 5th, 7th, 8th and 10th BCI2000 Workshops (also co-organizer of the 8th Workshop)
- 2007 - 2008 Manager of a project involving 20 scientists and clinicians, implementing brain-computer interface technology for communication in a completely-locked-in patient using implanted (ECoG) electrodes, MPI Tübingen and University of Tübingen, Germany
- 2005 - 2005 Co-devised and delivered a week-long practical course "Machine Learning in Neuroscience" to undergraduates on the "Bioinformatik" (Computational Biology) course, University of Tübingen
- 2004 - 2013 Supervisor of one Ph.D. student, three German Diplom (Masters) research students, one Bachelor's-thesis and several undergraduate interns, MPI Tübingen and Wadsworth Center
- 2002 - Invited reviewer of journal article submissions, Science: Translational Medicine, Neuroimage, Frontiers in Neuroscience, PLoS ONE, Attention, Perception and Psychophysics, the Journal of the Acoustical Society of America, the Journal of Neural Engineering, IEEE Transactions on Biomedical Engineering, IEEE Transactions on Neural Systems and Rehabilitation Engineering, Neurocomputing, Neural Networks and the Journal of Machine Learning Research, as well as for the machine-learning conferences NIPS and DAGM, and two books on brain-computer interfacing (MIT Press 2007, OUP 2012)
- 1999 - 2000 Tutor for first-year undergraduates on the course "Sensory Processes and Perception", Department of Experimental Psychology, University of Oxford, UK

Honors

- 2018 "Doctors of Distinction" award ("Biomedical Breakthrough" category), Westfair Communications, Westchester County, NY
- 2015 Invited speaker, Burke Centennial Research Symposium
- 2013 Research featured in New Scientist magazine: <http://www.newscientist.com/article/dn24553>
- 2013 Platform presentation, Society for Neuroscience meeting
- 2010 Invited speaker at the plenary symposium, "Non-Invasive Brain-Computer Interfaces: Current Developments and Applications", BIOMAG Conference, Dubrovnik, Croatia
- 2009 Invited keynote speaker at the mini-symposium "Assistive Machine Learning for People with Disabilities", NIPS
- 2008 "Spotlight" for outstanding contributed paper, Neural Information Processing Systems (NIPS)
- 2007 Invited speaker at launch event, BrainGain, the Dutch brain-computer interfacing research consortium, Nijmegen, The Netherlands
- 1996 Maplethorpe Scholarship, St. Hugh's College, Oxford, UK
- 1996 Christopher Welch Scholarship in Biological Sciences, University of Oxford, UK
- 1995 George Humphrey prize for best research project, Department of Experimental Psychology, University of Oxford, UK

Contribution to Science

1. **Real-time decoding of brain signals that reflect auditory stimulus processing:** In 2005 I was the first to publish on the feasibility of basing a brain-computer interface (BCI) on selective attention to auditory stimuli. I refined and explored this system in a subsequent series of publications. In this way, I invented a system by which the act of selective *listening* can be detected from a few seconds of EEG signal. This has applications in communication systems for people who are completely "locked in" (especially since such users often have trouble seeing visual stimuli clearly) and also in real-time neurofeedback applications that have the potential to improve the important cognitive function of selective auditory attention.
 - a. Hill NJ, Lal TN, Bierig K, Birbaumer N, Schölkopf B. An Auditory Paradigm for Brain-Computer Interfaces. *Advances in Neural Information Processing Systems*. 2005; 17:569-576.
 - b. Hill NJ, Moinuddin A, Häuser AK, Kienzle S, Schalk G. Communication and control by listening: toward optimal design of a two-class auditory streaming brain-computer interface. *Front Neurosci*. 2012;6:181. PubMed PMID: [23267312](#); PubMed Central PMCID: [PMC3525941](#).
 - c. Hill NJ, Schölkopf B. An online brain-computer interface based on shifting attention to concurrent streams of auditory stimuli. *J Neural Eng*. 2012 Apr;9(2):026011. PubMed PMID: [22333135](#); PubMed Central PMCID: [PMC3366495](#).
 - d. Hill NJ, Ricci E, Haider S, McCane LM, Heckman S, Wolpaw JR, Vaughan TM. A practical, intuitive brain-computer interface for communicating 'yes' or 'no' by listening. *J Neural Eng*. 2014 Jun;11(3):035003. PubMed PMID: [24838278](#); PubMed Central PMCID: [PMC4096243](#).

2. **Development and validation of non-verbal systems for neurological assessment and visuomotor reinforcement:** The following publications used quantitative and objective methods for assessing neurological function, and adapted them for use outside laboratory settings, hardening them into robust systems that can be used in field applications such as bedside testing. The principal focus was vision testing. Our first system, OptokineSys (described in Suner et al 2017) was unprecedented in its ability to measure visual psychophysical thresholds from non-communicative subjects, and opened the door to objective quantification of cerebral visual impairment. Its successors, Curveball and Gradiate (Mooney et al. 2018, 2020), are unprecedented in the speed with which they can measure contrast sensitivity functions. The technical infrastructure that allows Curveball and Gradiate to present research-quality visual stimuli and to manipulate them in real time, even on low-cost portable hardware, has been made publicly available under the name "Shady" (Hill et al. 2019).
 - a. Mooney SWJ, Alam NM, Hill NJ, Prusky GT. Gradiate: A radial sweep approach to measuring detailed contrast sensitivity functions from eye movements. *J Vis*. 2020 Dec 2;20(13):17. PubMed PMID: [33369613](#); PubMed Central PMCID: [PMC7774112](#).
 - b. Hill NJ, Mooney SWJ, Ryklin EB, Prusky GT. Shady: A software engine for real-time visual stimulus manipulation. *J Neurosci Methods*. 2019 May 15;320:79-86. PubMed PMID: [30946876](#); PubMed Central PMCID: [PMC6524778](#).
 - c. Mooney SWJ, Hill NJ, Tuzun MS, Alam NM, Carmel JB, Prusky GT. Curveball: A tool for rapid measurement of contrast sensitivity based on smooth eye movements. *J Vis*. 2018 Nov 1;18(12):7. PubMed PMID: [30452585](#); PubMed Central PMCID: [PMC6238984](#).
 - d. Suner M, Prusky GT, Carmel JB, Hill NJ. Longitudinal Quantification of Eye-Movement Impairments after Pontine Hemorrhage. *Front Neurol*. 2017;8:165. PubMed PMID: [28512444](#); PubMed Central PMCID: [PMC5411421](#).

3. **Advancement of signal-processing and machine-learning methods for brain-computer interfacing:** In these publications and others, I developed and validated custom analysis methods and signal processing pipelines for the essential problem of brain-computer interfacing: extracting useful information from short brain signal segments. It is in the translation from lab to bedside, where data-sets tend to be smaller and noisier, that BCI systems stand to benefit most from the increased robustness of state-of-the-art machine-learning techniques.
 - a. Hill NJ, Lal TN, Tangermann MW, Hinterberger T, Widman G, Elger CE, Schölkopf B, Birbaumer N. Toward Brain-Computer Interfacing. Dornhege G, Millán J, Hinterberger T, McFarland DJ, Müller K, editors. Cambridge, MA: MIT Press; 2007. Chapter 14, Classifying Event-Related Desynchronization in EEG, ECoG and MEG signals; p.235-260.
 - b. Hill J, Farquhar J, Martens S, Biessmann F, Schölkopf B. Effects of Stimulus Type and of Error-Correcting Code Design on BCI Speller Performance. *Advances in Neural Information Processing Systems*. 2009; 21:665-672.
 - c. Farquhar J, Hill NJ. Interactions between pre-processing and classification methods for event-related-potential classification: best-practice guidelines for brain-computer interfacing. *Neuroinformatics*. 2013 Apr;11(2):175-92. PubMed PMID: [23250668](#).
 - d. Hill NJ, Häuser AK, Schalk G. A general method for assessing brain-computer interface performance and its limitations. *J Neural Eng*. 2014 Apr;11(2):026018. PubMed PMID: [24658406](#); PubMed Central PMCID: [PMC4113089](#).

4. **Development of brain-computer interface communication methods for completely paralyzed users:** My publications in this section address the algorithmic, practical, and ethical challenges of bringing BCI systems out of the laboratory (where they are typically tested only on healthy subjects) and into homes and hospitals where the target users can use them. Another important aspect of this general endeavor has been the development of BCIs driven by auditory stimuli (see above).
 - a. Hill NJ, Lal TN, Schröder M, Hinterberger T, Wilhelm B, Nijboer F, Mochty U, Widman G, Elger C, Schölkopf B, Kübler A, Birbaumer N. Classifying EEG and ECoG signals without subject training for fast BCI implementation: comparison of nonparalyzed and completely paralyzed subjects. *IEEE Trans Neural Syst Rehabil Eng*. 2006 Jun;14(2):183-6. PubMed PMID: [16792289](#).
 - b. Haselager P, Vlek R, Hill J, Nijboer F. A note on ethical aspects of BCI. *Neural Netw*. 2009 Nov;22(9):1352-7. PubMed PMID: [19616405](#).
 - c. Martens S, Bensch M, Halder S, Hill J, Nijboer F, Ramos-Murguialday A, Schoelkopf B, Birbaumer N, Gharabaghi A. Epidural electrocorticography for monitoring of arousal in locked-in state. *Front Hum Neurosci*. 2014;8:861. PubMed PMID: [25374532](#); PubMed Central PMCID: [PMC4204459](#).
 - d. Bensch M, Martens S, Halder S, Hill J, Nijboer F, Ramos A, Birbaumer N, Bogdan M, Kotchoubey B, Rosenstiel W, Schölkopf B, Gharabaghi A. Assessing attention and cognitive function in completely locked-in state with event-related brain potentials and epidural electrocorticography. *J Neural Eng*. 2014 Apr;11(2):026006. PubMed PMID: [24556584](#).

5. **Estimation and hypothesis testing in psychophysics:** My doctoral thesis, and the two associated 2001 papers, introduced statistical techniques for estimating thresholds and slopes of psychometric functions, and for accurate hypothesis testing using these measures. My software toolbox `psignifit`, introduced and validated in these publications, was adopted by many psychophysicists around the world for the purpose of fitting curves to psychometric functions and obtaining confidence intervals on the resulting parameters. In contrast to previous approaches, `psignifit` achieved more accurate results by taking account of nuisance parameters in fitting, and by using a resampling method instead of asymptotic approximations to predictive distributions. Worldwide adoption of my software resulted in more than 2,000 citations for the two papers according to Web Of Science. This demonstrates my capability and experience in building software tools that other scientists find usable and which empower them to advance their research.

- a. Hill N. Testing Hypotheses about Psychometric Functions. University of Oxford: Doctoral Thesis; 2001.
- b. Wichmann FA, Hill NJ. The psychometric function: II. Bootstrap-based confidence intervals and sampling. *Percept Psychophys*. 2001 Nov;63(8):1314-29. PubMed PMID: [11800459](#).
- c. Wichmann FA, Hill NJ. The psychometric function: I. Fitting, sampling, and goodness of fit. *Percept Psychophys*. 2001 Nov;63(8):1293-313. PubMed PMID: [11800458](#).

Published Work

Versions of the list below are also available at:

- myNCBI bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/nicholas.hill.1/bibliography/public/>
- Google Scholar: <https://scholar.google.com/citations?user=Mxio0T8AAAJ&pagesize=100>

Patents and Published Patent Applications

Hill NJ, Prusky GT, Carmel JB, inventors. OptokineSys. US20190320962A1 granted September 2021 (also: WO2018006013A1 pending).

Prusky GT, Mooney SW, Hill NJ, inventors. Systems and methods for evaluating contrast sensitivity and other visual metrics. US20200121179A1, EP3871145A1, WO2020086703A1 and IL282419D0 (pending; submitted October 2019).

Peer-Reviewed Articles

Kim N, Watson W, Caliendo E, Nowak S, Schiff N, Shah SA, Hill NJ. Objective Neurophysiologic Markers of Cognition After Pediatric Brain Injury. *Neurology Clinical Practice*. 2022 September; 12(5):352-364. doi: 10.1212/CPJ.0000000000200066.

Hill NJ, Gupta D, Eftekhari A, Brangaccio JA, Norton JJ, McLeod M, Fake T, Wolpaw JR, Thompson AK. The Evoked Potential Operant Conditioning System (EPOCS): A Research Tool and an Emerging Therapy for Chronic Neuromuscular Disorders. *Journal of Visualized Experiments*. 2022 Aug 25(186):e63736. doi: 10.3791/63736

Kim N, O'Sullivan J, Olafson E, Caliendo E, Nowak S, Voss H, Lowder R, Watson W, Ivanidze J, Fins J, Schiff N, Hill NJ, Shah S. [Cognitive-Motor Dissociation Following Pediatric Brain Injury: What about the Children?](#) *Neurology: Clinical Practice*. 2022 June; 12(3):248. doi: 10.1212/CPJ.0000000000001169. PubMed PMID: 35733619; PubMed Central PMCID: PMC9208423.

Hill NJ, Mooney SWJ, Prusky GT. [audiomath: A neuroscientist's sound toolkit](#). *Heliyon*. 2021 Feb;7(2):e06236. doi: 10.1016/j.heliyon.2021.e06236. eCollection 2021 Feb. PubMed PMID: 33615015; PubMed Central PMCID: PMC7881231.

Mooney SWJ, Alam NM, Hill NJ, Prusky GT. [Graduate: A radial sweep approach to measuring detailed contrast sensitivity functions from eye movements](#). *J Vis*. 2020 Dec 2;20(13):17. doi: 10.1167/jov.20.13.17. PubMed PMID: 33369613; PubMed Central PMCID: PMC7774112.

Hill NJ, Mooney SWJ, Ryklin EB, Prusky GT. [Shady: A software engine for real-time visual stimulus manipulation](#). *J Neurosci Methods*. 2019 May 15;320:79-86. doi: 10.1016/j.jneumeth.2019.03.020. Epub 2019 Apr 1. PubMed PMID: 30946876; PubMed Central PMCID: PMC6524778.

Ratnadurai Giridharan S, Gupta D, Pal A, Mishra AM, Hill NJ, Carmel JB. [Motometrics: A Toolbox for Annotation and Efficient Analysis of Motor Evoked Potentials](#). *Front Neuroinform*. 2019;13:8. doi: 10.3389/fninf.2019.00008. eCollection 2019. PubMed PMID: 30971908; PubMed Central PMCID: PMC6444173.

Mooney SWJ, Hill NJ, Tuzun MS, Alam NM, Carmel JB, Prusky GT. [Curveball: A tool for rapid measurement of contrast sensitivity based on smooth eye movements](#). J Vis. 2018 Nov 1;18(12):7. doi: 10.1167/18.12.7. PubMed PMID: 30452585; PubMed Central PMCID: PMC6238984.

Thompson AK, Carruth H, Haywood R, Hill NJ, Sarnacki WA, McCane LM, Wolpaw JR, McFarland DJ. [Effects of Sensorimotor Rhythm Modulation on the Human Flexor Carpi Radialis H-Reflex](#). Front Neurosci. 2018;12:505. doi: 10.3389/fnins.2018.00505. eCollection 2018. PubMed PMID: 30090056; PubMed Central PMCID: PMC6068279.

Wen TC, Lall S, Pagnotta C, Markward J, Gupta D, Ratnadurai-Giridharan S, Bucci J, Greenwald L, Klugman M, Hill NJ, Carmel JB. [Plasticity in One Hemisphere, Control From Two: Adaptation in Descending Motor Pathways After Unilateral Corticospinal Injury in Neonatal Rats](#). Front Neural Circuits. 2018;12:28. doi: 10.3389/fncir.2018.00028. eCollection 2018. PubMed PMID: 29706871; PubMed Central PMCID: PMC5906589.

Suner M, Prusky GT, Carmel JB, Hill NJ. [Longitudinal Quantification of Eye-Movement Impairments after Pontine Hemorrhage](#). Front Neurol. 2017;8:165. doi: 10.3389/fneur.2017.00165. eCollection 2017. PubMed PMID: 28512444; PubMed Central PMCID: PMC5411421.

Smeragliuolo AH, Hill NJ, Disla L, Putrino D. [Validation of the Leap Motion Controller using marked motion capture technology](#). J Biomech. 2016 Jun 14;49(9):1742-1750. doi: 10.1016/j.jbiomech.2016.04.006. Epub 2016 Apr 8. PubMed PMID: 27102160.

Kubanek J, Hill NJ, Snyder LH, Schalk G. [Cortical alpha activity predicts the confidence in an impending action](#). Front Neurosci. 2015;9:243. doi: 10.3389/fnins.2015.00243. eCollection 2015. PubMed PMID: 26283892; PubMed Central PMCID: PMC4516871.

Martens S, Bensch M, Halder S, Hill J, Nijboer F, Ramos-Murguialday A, Schoelkopf B, Birbaumer N, Gharabaghi A. [Epidural electrocorticography for monitoring of arousal in locked-in state](#). Front Hum Neurosci. 2014;8:861. doi: 10.3389/fnhum.2014.00861. eCollection 2014. PubMed PMID: 25374532; PubMed Central PMCID: PMC4204459.

Gupta D, Jeremy Hill N, Brunner P, Gunduz A, Ritaccio AL, Schalk G. [Simultaneous real-time monitoring of multiple cortical systems](#). J Neural Eng. 2014 Oct;11(5):056001. doi: 10.1088/1741-2560/11/5/056001. Epub 2014 Jul 31. PubMed PMID: 25080161; PubMed Central PMCID: PMC4175132.

Gupta D, Hill NJ, Adamo MA, Ritaccio A, Schalk G. [Localizing ECoG electrodes on the cortical anatomy without post-implantation imaging](#). Neuroimage Clin. 2014;6:64-76. doi: 10.1016/j.nicl.2014.07.015. eCollection 2014. PubMed PMID: 25379417; PubMed Central PMCID: PMC4215521.

Hill NJ, Ricci E, Haider S, McCane LM, Heckman S, Wolpaw JR, Vaughan TM. [A practical, intuitive brain-computer interface for communicating 'yes' or 'no' by listening](#). J Neural Eng. 2014 Jun;11(3):035003. doi: 10.1088/1741-2560/11/3/035003. Epub 2014 May 19. PubMed PMID: 24838278; PubMed Central PMCID: PMC4096243.

Bensch M, Martens S, Halder S, Hill J, Nijboer F, Ramos A, Birbaumer N, Bogdan M, Kotchoubey B, Rosenstiel W, Schölkopf B, Gharabaghi A. [Assessing attention and cognitive function in completely locked-in state with event-related brain potentials and epidural electrocorticography](#). J Neural Eng. 2014 Apr;11(2):026006. doi: 10.1088/1741-2560/11/2/026006. Epub 2014 Feb 21. PubMed PMID: 24556584.

Hill NJ, Häuser AK, Schalk G. [A general method for assessing brain-computer interface performance and its limitations](#). J Neural Eng. 2014 Apr;11(2):026018. doi: 10.1088/1741-2560/11/2/026018. Epub 2014 Mar 24. PubMed PMID: 24658406; PubMed Central PMCID: PMC4113089.

Farquhar J, Hill NJ. [Interactions between pre-processing and classification methods for event-related-potential classification: best-practice guidelines for brain-computer interfacing](#). Neuroinformatics. 2013 Apr;11(2):175-92. doi: 10.1007/s12021-012-9171-0. PubMed PMID: 23250668.

Hill NJ, Moinuddin A, Häuser AK, Kienzle S, Schalk G. [Communication and control by listening: toward optimal design of a two-class auditory streaming brain-computer interface](#). Front Neurosci. 2012;6:181. doi: 10.3389/fnins.2012.00181. eCollection 2012. PubMed PMID: 23267312; PubMed Central PMCID: PMC3525941.

Hill NJ, Gupta D, Brunner P, Gunduz A, Adamo MA, Ritaccio A, Schalk G. [Recording human electrocorticographic \(ECoG\) signals for neuroscientific research and real-time functional cortical mapping.](#) J Vis Exp. 2012 Jun 26;(64). doi: 10.3791/3993. PubMed PMID: 22782131; PubMed Central PMCID: PMC3471287.

Hill NJ, Schölkopf B. [An online brain-computer interface based on shifting attention to concurrent streams of auditory stimuli.](#) J Neural Eng. 2012 Apr;9(2):026011. doi: 10.1088/1741-2560/9/2/026011. Epub 2012 Feb 15. PubMed PMID: 22333135; PubMed Central PMCID: PMC3366495.

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Gomez-Rodriguez M, Peters J, Hill J, Schölkopf B, Gharabaghi A, Grosse-Wentrup M. [Closing the sensorimotor loop: haptic feedback facilitates decoding of motor imagery.](#) J Neural Eng. 2011 Jun;8(3):036005. doi: 10.1088/1741-2560/8/3/036005. Epub 2011 Apr 8. PubMed PMID: 21474878.

Grosse-Wentrup M, Schölkopf B, Hill J. [Causal influence of gamma oscillations on the sensorimotor rhythm.](#) Neuroimage. 2011 May 15;56(2):837-42. doi: 10.1016/j.neuroimage.2010.04.265. Epub 2010 May 6. PubMed PMID: 20451626.

Murguialday AR, Hill J, Bensch M, Martens S, Halder S, Nijboer F, Schoelkopf B, Birbaumer N, Gharabaghi A. [Transition from the locked in to the completely locked-in state: a physiological analysis.](#) Clin Neurophysiol. 2011 May;122(5):925-33. doi: 10.1016/j.clinph.2010.08.019. Epub 2010 Dec 9. PubMed PMID: 20888292.

Martens SM, Mooij JM, Hill NJ, Farquhar J, Schölkopf B. [A graphical model framework for decoding in the visual ERP-based BCI speller.](#) Neural Comput. 2011 Jan;23(1):160-82. doi: 10.1162/NECO_a_00066. Epub 2010 Oct 21. PubMed PMID: 20964540.

Shin H, Hill NJ, Lisewski AM, Park J. Graph Sharpening. Expert Systems with Applications. 2010; 37(12):7870-7879.

Haselager P, Vlek R, Hill J, Nijboer F. [A note on ethical aspects of BCI.](#) Neural Netw. 2009 Nov;22(9):1352-7. doi: 10.1016/j.neunet.2009.06.046. Epub 2009 Jul 7. PubMed PMID: 19616405.

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Hinterberger T, Widman G, Lal TN, Hill J, Tangermann M, Rosenstiel W, Schölkopf B, Elger C, Birbaumer N. [Voluntary brain regulation and communication with electrocorticogram signals.](#) Epilepsy Behav. 2008 Aug;13(2):300-6. doi: 10.1016/j.yebeh.2008.03.014. Epub 2008 May 20. PubMed PMID: 18495541.

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Zalevski AM, Henning GB, Hill NJ. [Cue combination and the effect of horizontal disparity and perspective on stereoacuity.](#) Spat Vis. 2007;20(1-2):107-38. doi: 10.1163/156856807779369706. PubMed PMID: 17357718.

Hill NJ, Lal TN, Tangermann MW, Hinterberger T, Widman G, Elger CE, Schölkopf B, Birbaumer N. Classifying Event-Related Desynchronization in EEG, ECoG and MEG signals. In: Dornhege G, Millán J, Hinterberger T, McFarland DJ, Müller KR, editors. Toward Brain-Computer Interfacing Cambridge, MA: MIT Press; 2007. Chapter 14; p.235-260.

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- Kammer T, Puls K, Strasburger H, Hill NJ, Wichmann FA. [Transcranial magnetic stimulation in the visual system. I. The psychophysics of visual suppression.](#) Exp Brain Res. 2005 Jan;160(1):118-28. doi: 10.1007/s00221-004-1991-1. PubMed PMID: 15368086.
- Hill NJ, Lal TN, Bierig K, Birbaumer N, Schölkopf B. An Auditory Paradigm for Brain-Computer Interfaces. Advances in Neural Information Processing Systems. 2005; 17:569-576.
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- Lal TN, Hinterberger T, Widman G, Schröder M, Hill J, Rosenstiel W, Elger CE, Schölkopf B, Birbaumer N. Methods Towards Invasive Human Brain Computer Interfaces. Advances in Neural Information Processing Systems. 2005; 17:737-744.
- Henning GB, Hoddinott KT, Wilson-Smith ZJ, Hill NJ. [Masking effect produced by Mach bands on the detection of narrow bars of random polarity.](#) J Opt Soc Am A Opt Image Sci Vis. 2004 Aug;21(8):1379-87. doi: 10.1364/josaa.21.001379. PubMed PMID: 15330463.
- Wichmann FA, Hill NJ. [The psychometric function: I. Fitting, sampling, and goodness of fit.](#) Percept Psychophys. 2001 Nov;63(8):1293-313. doi: 10.3758/bf03194544. PubMed PMID: 11800458.
- Wichmann FA, Hill NJ. [The psychometric function: II. Bootstrap-based confidence intervals and sampling.](#) Percept Psychophys. 2001 Nov;63(8):1314-29. doi: 10.3758/bf03194545. PubMed PMID: 11800459.
- Hill NJ. Testing Hypotheses about Psychometric Functions University of Oxford: Doctoral Thesis; 2001.
- Henning GB, Millar RW, Hill NJ. [Detection of incremental and decremental bars at different locations across Mach bands and related stimuli.](#) J Opt Soc Am A Opt Image Sci Vis. 2000 Jul;17(7):1147-59. doi: 10.1364/josaa.17.001147. PubMed PMID: 10883966.