

BIBLIOGRAPHY

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articles

- Farina D, Vujaklija I, Sartori M, Kapelner T, Negro F, Jiang N, Bergmeister K, Andalib A, Principe J, Aszmann OC (2017) Man/machine interface based on the discharge timings of spinal motor neurons after targeted muscle reinnervation. *Nature Biomed Eng* 1:0025.
- Krebs HI, Aisen ML, Volpe BT, Hogan N (1999) Quantization of continuous arm movements in humans with brain injury. *Proc Natl Acad Sci USA* 96(8):4645–4649.
- Melvill Jones G, DeJong JD (1971) Dynamic characteristics of saccadic eye movements in Parkinson's disease. *Exp Neurol* 31(1):17–31.
- Awakenings, 1990, movie by Penny Marshall, adapted from Awakenings, 1973, book by Oliver Sacks (<https://www.youtube.com/watch?v=Hj52vD7KGxs>)
- Snijders AH, Bloem BR (2010) Images in clinical medicine. Cycling for freezing of gait. *N Engl J Med* 362(13):e46.
- Hughlings Jackson J (1882) On some implications of dissolution of the nervous system. *Med Press Circ* 2:411–414.
- Hefter H, Hömberg V, Freund H-J (1988) Quantitative analysis of voluntary and involuntary motor phenomena in Parkinson's disease. In: *Early Diagnosis and Preventive Therapy in Parkinson's Disease: Key Topics in Brain Research*, Vol 65 (Przuntek H, Riederer P, eds), pp 65–73. Wien: Springer-Verlag.
- Forrest K, Weismer G, Turner GS (1989) Kinematic, acoustic, and perceptual analyses of connected speech produced by parkinsonian and normal geriatric adults. *J Acoust Soc Am* 85(6):2608–2622.

- Scott SH (2004) Optimal feedback control and the neural basis of volitional motor control. *Nat Rev Neurosci* 5(7):532–546.
- Shadmehr R, Krakauer JW (2008) A computational neuroanatomy for motor control. *Exp Brain Res* 185(3):359–381.
- Herculano-Houzel S (2009) The human brain in numbers: a linearly scaled-up primate brain. *Front Hum Neurosci* 3:31.
- Bizzi E, Mussa-Ivaldi FA, Giszter S (1991) Computations underlying the execution of movement – A biological perspective. *Science* 253(5017):287–291.
- Park MC, Belhaj-Saif A, Gordon M, Cheney PD (2001) Consistent features in the forelimb representation of primary motor cortex in rhesus macaques. *J Neurosci* 21(8):2784–2792.
- Humphrey DR, Tanji J (1991) What features of voluntary motor control are encoded in the neuronal discharge of different cortical motor areas?. In: *Motor Control: Concepts and Issues* (Humphrey DR, Freund H-J, eds), pp 413–443. Chichester, UK: Wiley.
- Sergio LE, Kalaska JF (1998) Changes in the temporal pattern of primary motor cortex activity in a directional isometric force versus limb movement task. *J Neurophysiol* 80(3):1577–1583.
- Griffin DM, Hudson HM, Belhaj-Saif A, McKiernan BJ, Cheney PD (2008) Do corticomotoneuronal cells predict target muscle EMG activity?. *J Neurophysiol* 99(3):1169–1986.
- Kurtzer IL, Pruszynski JA, Scott SH (2008) Long-latency reflexes of the human arm reflect an internal model of limb dynamics. *Curr Biol* 18(6):449–453.
- Pruszynski JA, Kurtzer I, Nashed JY, Omrani M, Brouwer B, Scott SH (2011) Primary motor cortex underlies multi-joint integration for fast feedback control. *Nature* 478(7369):387–390.
- Nudo RJ, Milliken GW, Jenkins WM, Merzenich MM (1996) Use-dependent alterations of movement representations in primary motor cortex of adult squirrel monkeys. *J Neurosci* 16(2):785–807.
- Hoffman DS, Strick PL (1995) Effects of a primary motor cortex lesion on step-tracking movements of the wrist. *J Neurophysiol* 73(2):891–895.
- Lawrence DG, Kuypers HGJM (1968) The functional organization of the motor system in the monkey. I. The effects of bilateral pyramidal lesions. *Brain* 91(1):1–14.
- Hallett M, Berardelli A, Matheson J, Rothwell JC, Marsden CD (1991) Physiological analysis of simple rapid movements in patients with cerebellar deficits. *J Neurol Neurosurg Psychiatry* 54(2):124–133.
- Wolpert DM, Miall RC, Kawato M (1998) Internal models in the cerebellum. *Trends Cogn Sci* 2(9):338–347.
- Paulin MG (1993) The role of the cerebellum in motor control and perception. *Brain Behav Evol* 41(1):39–50.
- Pasalar S, Roitman AV, Durfee WK, Ebner TJ (2006) Force field effects on cerebellar Purkinje cell discharge with implications for internal models. *Nat Neurosci* 9(11):1404–1411.
- Nowak DA, Timmann D, Hermsdörfer J (2007) Dexterity in cerebellar agenesis. *Neuropsychologia* 45(4):696–703.
- Blakemore SJ, Frith CD, Wolpert DM (2001) The cerebellum is involved in predicting the sensory consequences of action. *NeuroReport* 12(9):1879–1884.
- Chevalier G, Deniau J-M (1990) Disinhibition as a basic process in the expression of striatal functions. *Trends Neurosci* 13(7):277–280.
- Alexander GE, DeLong MR, Strick PL (1986) Parallel organization of functionally segregated circuits linking basal ganglia and cortex. *Annu Rev Neurosci* 9:357–381.
- Lozano AM, Hutchison WD, Kalia SK (2017) What have we learned about movement disorders from functional neurosurgery? *Annu Rev Neurosci* 40:453–477.
- Hallett M, Khoshbin S (1980) A physiological mechanism of bradykinesia. *Brain* 103(2):301–314.
- Berardelli A, Rothwell JC, Day BL, Marsden CD (1984) Movements not involved in posture are abnormal in Parkinson's disease. *Neurosci Lett* 47(1):47–50.
- Berardelli A, Dick JP, Rothwell JC, Day BL, Marsden CD (1986) Scaling of the size of the first agonist EMG burst during rapid wrist movements in patients with Parkinson's disease. *J Neurol Neurosurg Psychiatry* 49(11):1273–1279.
- Georgiou N, Iansek R, Bradshaw JL, Phillips JG, Mattingley JB, Bradshaw JA (1993) An evaluation of the role of internal cues in the pathogenesis of Parkinsonian hypokinesia. *Brain* 116(6):1575–1587.
- Schwab RS, England AC, Peterson E (1959) Akinesia in Parkinson's disease. *Neurology* 9(1):65–72.
- Schmidt L, d'Arc BF, Lafargue G, Galanaud D, Czernecki V, Grabli D, Schüpbach M, Hartmann A, Lévy R, Dubois B, Pessiglione M (2008) Disconnecting force from money: Effects of basal ganglia damage on incentive motivation. *Brain* 131(5):1303–1310.

- Kutch JJ, Buchanan TS (2001) Human elbow joint torque is linearly encoded in electromyographic signals from multiple muscles. *Neurosci Lett* 311(2):97–100.
- Lee DD, Seung HS (1999) Learning the parts of objects by non-negative matrix factorization. *Nature* 401:788–791.
- Latash ML, Scholz JP, Schönner G (2002) Motor control strategies revealed in the structure of motor variability. *Exerc Sports Sci Rev* 30(1):26–31.
- Macpherson JM (1991) How flexible are muscle synergies?. In: *Motor Control: Concepts and Issues* (Humphrey DR, Freund H-J, eds), pp 33–48. Chichester, UK: Wiley.
- Nashner LM (1977) Fixed patterns of rapid postural responses among leg muscles during stance. *Exp Brain Res* 30(1):13–24.
- Horak FB, Macpherson JM (1996) Postural orientation and equilibrium. In: *Handbook of Physiology, Section 12. Exercise: Regulation and Integration of Multiple Systems* (Smith JL, ed), pp 255–292. New York, NY: Oxford University Press.
- Ting LH, Macpherson JM (2005) A limited set of muscle synergies for force control during a postural task. *J Neurophysiol* 93(1):609–613.
- Tresch MC, Saltiel P, Bizzi E (1999) The construction of movement by the spinal cord. *Nat Neurosci* 2(2):162–167.
- d'Avella A, Saltiel P, Bizzi E (2003) Combinations of muscle synergies in the construction of a natural motor behavior. *Nat Neurosci* 6(3):300–308.
- Scholz JP, Schönner G (1999) The uncontrolled manifold concept: Identifying control variables for a functional task. *Exp Brain Res* 126(3):289–306.
- van Beers RJ, Brenner E, Smeets JBJ (2013) Random walk of motor planning in task-irrelevant dimensions. *J Neurophysiol* 109(4):969–977.
- Hausdorff JM, Peng CK, Ladin Z, Wei JY, Goldberger AL (1995) Is walking a random walk? Evidence for long-range correlations in stride interval of human gait. *J Appl Physiol* 78(1):349–358.
- Hausdorff JM, Purdon PL, Peng CK, Ladin Z, Wei JY, Goldberger AL (1996) Fractal dynamics of human gait: Stability of long-range correlations in stride interval fluctuations. *J Appl Physiol* 80(5):1448–1457.
- Pincus SM, Gladstone IM, Ehrenkranz RA (1991) A regularity statistic for medical data analysis. *J Clin Monit* 7(4):335–345.
- Slifkin AB, Vaillancourt DE, Newell KM (2000) Intermittency in the control of continuous force production. *J Neurophysiol* 84(4):1708–1718.
- Vaillancourt DE, Newell KM (2000) The dynamics of resting and postural tremor in Parkinson's disease. *Clin Neurophysiol* 111(11):2046–2056.
- Collins JJ, De Luca CJ (1993) Open-loop and closed-loop control of posture – A random-walk analysis of center-of-pressure trajectories. *Exp Brain Res* 95(2):308–318.
- Jordan K, Challis JH, Newell KM (2006) Long range correlations in the stride interval of running. *Gait Posture* 24(1):120–125.
- Nakayama Y, Kudo K, Ohtsuki T (2010) Variability and fluctuation in running gait cycle of trained runners and non-runners. *Gait Posture* 31(3):331–335.
- Peterka RJ (2000) Postural control model interpretation of stabilogram diffusion analysis. *Biol Cybern* 82(4):335–343.
- Bottaro A, Casadio M, Morasso PG, Sanguineti V (2005) Body sway during quiet standing: Is it the residual chattering of an intermittent stabilization process?. *Hum Mov Sci* 24(4):588–615.
- Delignières D, Deschamps T, Legros A, Caillou N (2003) A methodological note on nonlinear time series analysis: Is the open- and closed-loop model of Collins and De Luca (1993) a statistical artifact?. *J Mot Behav* 35(1):86–97.
- Delignières D, Torre K (2009) Fractal dynamics of human gait: A reassessment of the 1996 data of Hausdorff et al. *J Appl Physiol* 106(4):1272–1279.

- Levin MF (1996) Interjoint coordination during pointing movements is disrupted in spastic hemiparesis. *Brain* 119(1):281–293.
- Trombly CA (1993) Observations of improvement of reaching in five subjects with left hemiparesis. *J Neurol Neurosurg Psychiatry* 56(1):40–45.
- Krebs HI, Aisen ML, Volpe BT, Hogan N (1999) Quantization of continuous arm movements in humans with brain injury. *Proc Natl Acad Sci USA* 96(8):4645–4649.
- DeJong SL, Schaefer SY, Lang CE (2012) Need for speed: Better movement quality during faster task performance after stroke. *Neurorehabil Neural Repair* 26(4):362–373.
- Nudo RJ, Wise BM, SiFuentes F, Milliken GW (1996) Neural substrates for the effects of rehabilitative training on motor recovery after ischemic infarct. *Science* 272(5269):1791–1794.
- Duncan PW, Goldstein LB, Matchar D, Divine GW, Feussner J (1992) Measurement of motor recovery after stroke. Outcome assessment and sample size requirements. *Stroke* 23(8):1084–1089.
- Kwakkel G, Kollen B, Twisk J (2006) Impact of time on improvement of outcome after stroke. *Stroke* 37(9):2348–2353.
- Hidaka Y, Han CE, Wolf SL, Winstein CJ, Schweighofer N (2012) Use it and improve it or lose it: Interactions between arm function and use in humans post-stroke. *PLoS Comput Biol* 8(2):e1002343.
- Rohrer B, Fasoli S, Krebs HI, Hughes R, Volpe B, Frontera WR, Stein J, Hogan N (2002) Movement smoothness changes during stroke recovery. *J Neurosci* 22(18):8297–8304.
- Balasubramanian S, Melendez-Calderon A, Burdet E (2012) A robust and sensitive metric for quantifying movement smoothness. *IEEE Trans Biomed Eng* 59(8):2126–2136.
- Kwakkel G, Meskers CG (2014) Effects of robotic therapy of the arm after stroke. *Lancet Neurol* 13(2):132–133.
- Han CE, Arbib MA, Schweighofer N (2008) Stroke rehabilitation reaches a threshold. *PLoS Comput Biol* 4(8):e1000133.
- Foldes ST, Weber DJ, Collinger JL (2015) MEG-based neurofeedback for hand rehabilitation. *J Neuroeng Rehabil* 12:85.
- Sarasola-Sanz A, Irastorza-Landa N, Lopez-Larraz E, Bibian C, Helmhold F, Broetz D, Birbaumer N, Ramos-Murguialday A (2017) A hybrid brain-machine interface based on EEG and EMG activity for the motor rehabilitation of stroke patients. *IEEE Int Conf Rehabil Robot* 2017:895–900.
- Farina D, Vujaklija I, Sartori M, Kapelner T, Negro F, Jiang N, Bergmeister K, Andalib A, Principe J, Aszmann OC (2017) Man/machine interface based on the discharge timings of spinal motor neurons after targeted muscle reinnervation. *Nat Biomed Eng* 1:0025.
- Person RS, Kudina LP (1972) Discharge frequency and discharge pattern of human motor units during voluntary contraction of muscle. *Electroencephalogr Clin Neurophysiol* 32(5):471–483.
- Velliste M, Perel S, Spalding MC, Whitford AS, Schwartz AB (2008) Cortical control of a prosthetic arm for self-feeding. *Nature* 453(7198):1098–1101.
- Bouton CE, Shaikhouni A, Annetta NV, Bockbrader MA, Friedenber DA, Nielson DM, Sharma G, Sederberg PB, Glenn BC, Mysiw WJ, Morgan AG, Deogaonkar M, Rezai AR (2016) Restoring cortical control of functional movement in a human with quadriplegia. *Nature* 533(7602):247–250.

- Brown P (1997) Muscle sounds in Parkinson's disease. *Lancet* 349(9051):533–535.
- Brown P, Marsden CD (1999) Bradykinesia and impairment of EEG desynchronization in Parkinson's disease. *Mov Disorders* 14(3):423–429.
- Turner RS, Desmurget M (2010) Basal ganglia contributions to motor control: A vigorous tutor. *Curr Opin Neurobiol* 20(6):704–716.
- Vaillancourt DE, Prodoehl J, Metman LV, Bakay RA, Corcos DM (2004) Effects of deep brain stimulation and medication on bradykinesia and muscle activation in Parkinson's disease. *Brain* 127(3):491–504.
- Chen CC, Lin WY, Chan HL, Hsu YT, Tu PH, Lee ST, Chiou SM, Tsai CH, Lu CS, Brown P (2011) Stimulation of the subthalamic region at 20 Hz slows the development of grip force in Parkinson's disease. *Exp Neurol* 231(1):91–96.
- Bastian AJ, Kelly VE, Perlmutter JS, Mink JW (2003) Effects of pallidotomy and levodopa on walking and reaching movements in Parkinson's disease. *Mov Disorders* 18(9):1008–1017.
- Morris ME, Iansek R, Matyas TA, Summers JJ (1994) Ability to modulate walking cadence remains intact in Parkinson's disease. *J Neurol Neurosurg Psychiatry* 57(12):1532–1534.
- Pau M, Corona F, Pili R, Casula C, Sors F, Agostini T, Cossu G, Guicciardi M, Murgia M (2016) Effects of physical rehabilitation integrated with rhythmic auditory stimulation on spatio-temporal and kinematic parameters of gait in Parkinson's disease. *Front Neurol* 7:126.
- Nieuwboer A, Kwakkel G, Rochester L, Jones D, van Wegen E, Willems AM, Chavret F, Hetherington V, Baker K, Lim I (2007) Cueing training in the home improves gait-related mobility in Parkinson's disease: The RESCUE trial. *J Neurol Neurosurg Psychiatry* 78(2):134–140.
- Hausdorff JM, Mitchell SL, Firtion R, Peng CK, Cudkowicz ME, Wei JY, Goldberger AL (1997) Altered fractal dynamics of gait: Reduced stride-interval correlations with aging and Huntington's disease. *J Appl Physiol* 82(1):262–269.
- Spencer RMC, Zelaznik HN, Diedrichsen J, Ivry RB (2003) Disrupted timing of discontinuous but not continuous movements by cerebellar lesions. *Science* 300(5624):1437–1439.
- Marquer A, Barbieri G, Pérennou D (2014) The assessment and treatment of postural disorders in cerebellar ataxia: a systematic review. *Ann Phys Rehabil Med* 57(2):67–78.
- Tucha O, Lange KW (2001) Effects of methylphenidate on kinematic aspects of handwriting in hyperactive boys. *J Abnorm Child Psychol* 29(4):351–356.
- Tucha O, Lange KW (2004) Handwriting and attention in children and adults with attention deficit hyperactivity disorder. *Motor Control* 8(4):461–471.
- Tucha O, Lange KW (2005) The effect of conscious control on handwriting in children with attention deficit hyperactivity disorder. *J Atten Disord* 9(1):323–332.
- Torres EB (2011) Two classes of movements in motor control. *Exp Brain Res* 215(3–4):269–283.
- Nguyen J, Majmudar U, Papathomas Thomas V, Silverstein SM, Torres EB (2016) Schizophrenia: The micro-movements perspective. *Neuropsychologia* 85:310–326.
- Torres EB (2013) Atypical signatures of motor variability found in an individual with ASD. *Neurocase* 19(2):150–165.