

Florian Loffing/Dirk Büsch/Jörg Schorer/Norbert Hagemann

# LINKSHÄNDER IM SPORT

## Ein empirischer Zwischenstand, vorläufige Handlungsempfehlungen und Erkenntnislücken

### Literatur

- Akpinar, S., Sainburg, R. L., Kirazci, S. & Przybyla, A. (2015). Motor asymmetry in elite fencers. *Journal of Motor Behavior*, 47, 302-311.
- Azémar, G., Ripoll, H., Simonet, P. & Stein, J. F. (1983). Étude neuro-psychologique du comportement des gauchers en escrime. *Cinésiologie*, 22, 7-18.
- Azemar, G., Stein, J. F. & Ripoll, H. (2008). Effects of ocular dominance on eye-hand coordination in sporting duels. *Science and Sports*, 23, 263-277.
- Beaton, A. A., Rudling, N., Kissling, C., Taurines, R. & Thome, J. (2011). Digit ratio (2D:4D), salivary testosterone, and handedness. *Laterality*, 16, 136-155.
- Boulinguez, P. (1999). Les avantages liés à la latéralité manuelle en escrime sont-ils l'expression d'asymétries cérébrales fonctionnelles? *Schweizerische Zeitschrift für Sportmedizin und Sporttraumatologie*, 47, 63-67.
- Brooks, R., Bussière, L. F., Jennions, M. D. & Hunt, J. (2004). Sinister strategies succeed at the cricket World Cup. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, 271, S64-S66.
- Carey, D. P., Smith, G., Smith, D. T., Shepherd, J. W., Skriver, J., Ord, L. et al. (2001). Footedness in world soccer: An analysis of France '98. *Journal of Sports Sciences*, 19, 855-864.
- Deutscher Judo Bund e.V. (2016). *Rahmentrainingskonzeption Nachwuchs (Fortschreibung)*.
- Edwards, S. & Beaton, A. (1996). Howzat?! Why is there an over-representation of left-handed bowlers in professional cricket in the UK? *Laterality: Asymmetries of Body, Brain and Cognition*, 1, 45-50.
- Faurie, C., Llaurens, V., Alvergne, A., Goldberg, M., Zins, M. & Raymond, M. (2011). Left-handedness and male-male competition: Insights from fighting and hormonal data. *Evolutionary Psychology*, 9, 354-370.
- Gilbert, A. N. & Wysocki, C. J. (1992). Hand preference and age in the United States. *Neuropsychologia*, 30, 601-608.
- Goldstein, S. R. & Young, C. A. (1996). "Evolutionary" stable strategy of handedness in major league baseball. *Journal of Comparative Psychology*, 110, 164-169.
- Goulet, C., Bard, C. & Fleury, M. (1989). Expertise differences in preparing to return a tennis serve: A visual information processing approach. *Journal of Sport & Exercise Psychology*, 11, 382-398.
- Grouios, G. (2004). Motoric dominance and sporting excellence: Training versus heredity. *Perceptual and Motor Skills*, 98, 53-66.
- Hagemann, N. (2009). The advantage of being left-handed in interactive sports. *Attention, Perception, & Psychophysics*, 71, 1641-1648.
- Heinen, T., Jeraj, D., Vinken, P. M. & Velentzas, K. (2012). Rotational Preference in Gymnastics. *Journal of Human Kinetics*, 33, 33-43.
- Heinen, T., Vinken, P. M. & Velentzas, K. (2010). Does laterality predict twist direction in gymnastics. *Science of Gymnastics Journal*, 2, 5-14.
- Hirotsu, N. & Wright, M. (2005). Modelling a baseball game to optimise pitcher substitution strategies incorporating handedness of players. *IMA Journal of Management Mathematics*, 16, 179-194.
- Hofsäss, K. (2007). Die Linkshänder-Mühle. *Tennis-magazin*, 6, 56-59.
- Karcher, C. & Buchheit, M. (2017). Anthropometric and physical performance requirements to be selected in elite handball academies: is being left-handed an advantage? *Sport Performance & Science Reports*, 9, vl.
- Loffing, F. (2017). Left-handedness and time pressure in elite interactive ball games. *Biology Letters*, 13 (11): 20170446 (doi: 10.1098/rsbl.2017.0446).
- Loffing, F. & Cañal-Bruland, R. (2017). *Anticipation in sport. Current Opinion in Psychology*, 16, 6-11.
- Loffing, F. & Hagemann, N. (2012). Side bias in human performance: A review on the left-handers' advantage in sports. In T. Dutta, M. Mandal & S. Kumar (Eds.), *Bias in Human Behaviour* (pp. 163-182). Hauppauge (NY): Nova Science.
- Loffing, F. & Hagemann, N. (2016). Performance differences between left- and right-sided athletes in one-on-one interactive sports. In F. Loffing, N. Hagemann, B. Strauss & C. MacMahon (Eds.), *Laterality in Sports: Theories and Applications* (pp. 249-277). San Diego: Academic Press.
- Loffing, F. & Hagemann, N. (in Vorbereitung). *Motor expertise is not enough: Handedness does not facilitate visual anticipation of same-handed action outcome*.
- Loffing, F., Hagemann, N. & Farrow, D. (2017). Perceptual-cognitive training: The next piece of the puzzle. In J. Baker, S. Copley, J. Schorer & N. Wattie (Eds.), *Routledge Handbook of Talent Identification and Development in Sport* (pp. 205-218). London: Routledge.
- Loffing, F., Hagemann, N., Schorer, J. & Baker, J. (2015a). Skilled players' and novices' difficulty anticipating left- vs. right-handed opponents' action intentions varies across different points in time. *Human Movement Science*, 40, 410-421.
- Loffing, F., Hagemann, N., Schorer, J. & Büsch, D. (2018). Vorteil Linkshänder? Fakten statt Mythen – eine wissenschaftliche Bestandsaufnahme zur Trefferquote linkshändiger Spieler. *Handballtraining*, 40 (2), 36-37.
- Loffing, F., Hagemann, N. & Strauss, B. (2009). The serve in professional men's tennis: Effects of players' handedness. *International Journal of Performance Analysis in Sport*, 9, 255-274.
- Loffing, F., Hagemann, N. & Strauss, B. (2010). Automated processes in tennis: Do left-handed players benefit from the tactical preferences of their opponents? *Journal of Sports Sciences*, 28, 435-443.
- Loffing, F., Hagemann, N. & Strauss, B. (2012). Left-handedness in professional and amateur tennis. *PLoS ONE*, 7, e49325 (doi: 10.1371/journal.pone.0049325).
- Loffing, F., Hagemann, N., Strauss, B. & MacMahon, C. (Eds.). (2016). *Laterality in Sports: Theories and Applications*. San Diego: Academic Press.
- Loffing, F., Schorer, J., Hagemann, N. & Baker, J. (2012). On the advantage of being left-handed in volleyball: Further evidence of the specificity of skilled visual perception. *Attention, Perception, & Psychophysics*, 74, 446-453.
- Loffing, F., Sölter, F., Großgart, S. & Hagemann, N. (2015b). Zur Relevanz unterschiedlicher Bewegungsmerkmale für die Antizipation des Ausgangs links- und rechtshändiger Handball-7m-Würfe: Eine Studie mit Torhütern, Feldspielern und Novizen. In J. Hermsdörfer, W. Stadler & L. Johannsen (Hrsg.), *The Athlete's Brain: Neuronale Aspekte motorischer Kontrolle im Sport* (S. 103 f.). Hamburg: Feldhaus.
- Loffing, F., Sölter, F. & Hagemann, N. (2014). Left preference for sport tasks does not necessarily indicate left-handedness: Sport-specific lateral preferences, relationship with handedness and implications for laterality research in behavioural sciences. *PLoS ONE*, 9, e105800 (doi: 10.1371/journal.pone.0105800).
- Loffing, F., Sölter, F., Hagemann, N. & Strauss, B. (2015). Accuracy of outcome anticipation, but not gaze behavior, differs against left- and right-handed penalties in team-handball goalkeeping. *Frontiers in Psychology*, 6: 1820 (doi: 10.3389/fpsyg.2015.01820).
- Loffing, F., Sölter, F., Hagemann, N. & Strauss, B. (2016). On-court position and handedness in visual anticipation of stroke direction in tennis. *Psychology of Sport and Exercise*, 27, 195-204.
- Mann, D. L., Runswick, O. R. & Allen, P. M. (2016). Hand and eye dominance in sport: Are cricket batters taught to bat back-to-front? *Sports Medicine*, 46 (9), 1355-1363.
- Moore, B. B., Adams, R. D., O'Dwyer, N. J., Steel, K. A. & Copley, S. (2017). Laterality frequency, team familiarity, and game experience affect kicking-foot identification in Australian football players. *International Journal of Sports Science & Coaching*, 12, 351-358.
- Müller, S. & Abernethy, B. (2012). Expert anticipatory skill in striking sports: A review and a model. *Research Quarterly for Exercise and Sport*, 83, 175-187.
- Neumaier, A. (1983). Beobachtungsstrategien und Antizipation bei der Abwehr von Volleyballangriffen. *Leistungssport*, 13 (4), 5-10.
- Neumaier, A. (1984). Zum Einfluß von Beobachtungsanweisungen auf die Antizipation von Volleyballangriffen. In E. Christmann (Hrsg.), *Volleyball trainieren* (S. 171-194). Hamburg: Czwalina.
- Oberbeck, H. (1992). Seitigkeitstypologie im Leistungssport. *Leistungssport*, 22 (1), 35-40.
- Papadatou-Pastou, M., Martin, M. & Mohr, C. (2017). Salivary testosterone levels are unrelated to handedness or cerebral lateralization for language. *Laterality*, 22, 123-156.
- Papadatou-Pastou, M., Martin, M., Munafò, M. R. & Jones, G. V. (2008). Sex differences in left-handedness: A meta-analysis of 144 studies. *Psychological Bulletin*, 134, 677-699.
- Peters, M., Reimers, S. & Manning, J. T. (2006). Hand preference for writing and associations with selected demographic and behavioral variables in 255,100 subjects: The BBC internet study. *Brain and Cognition*, 62, 177-189.
- Pilić, N. (2011). Auf die linke Tour. *Tennismagazin*, 7, 54-58.

- Portal, J. M. & Romano, P. E. (1988). Patterns of eye-hand dominance in baseball players. *New England Journal of Medicine*, 319, 655-656.
- Raymond, M., Pontier, D., Dufour, A. B. & Møller, A. P. (1996). Frequency-dependent maintenance of left handedness in humans. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, 263, 1627-1633.
- Reynolds, M. (2005). Vorsicht, linke Typen! *Tennis-magazin*, 1-2, 62-65.
- Sampras, P. (1998). Don't let southpaws scare you: after losing some tough matches to left-handers, we learned how to handle them. *Tennis*, 34, 142-145.
- Schorer, J., Loffing, F., Hagemann, N. & Baker, J. (2012). Human handedness in interactive situations: Negative perceptual frequency effects can be reversed! *Journal of Sports Sciences*, 30, 507-513.
- Schorer, J., Tirp, J., Steingröver, C. & Baker, J. (2016). Laterality and its role in talent identification and athlete development. In F. Loffing, N. Hagemann, B. Strauss & C. MacMahon (Eds.), *Laterality in Sports: Theories and Applications* (pp. 87-105). San Diego: Academic Press.
- Schwed, P. (1975). *Sinister tennis. How to play against and with left-handers*. New York: Doubleday.
- Sterkowicz, S., Lech, G. & Blecharz, J. (2010). Effects of laterality on the technical/tactical behavior in view of the results of judo fights. *Archives of Budo*, 6, 173-177.
- Stöckel, T. & Carey, D. P. (2016). Laterality effects on performance in team sports: Insights from soccer and basketball. In F. Loffing, N. Hagemann, B. Strauss & C. MacMahon (Eds.), *Laterality in Sports: Theories and Applications* (pp. 309-328). San Diego: Academic Press.
- Tirp, J., Baker, J., Weigelt, M. & Schorer, J. (2014). Combat stance in judo - Laterality differences between and within competition levels. *International Journal of Performance Analysis in Sport*, 14, 217-224.
- Verbeek, J., Elferink-Gemser, M. T., Jonker, L., Huijgen, B. C. H. & Visscher, C. (2017). Laterality related to the successive selection of Dutch national youth soccer players. *Journal of Sports Sciences*, 35, 2220-2224.
- Witkowski, M., Tomczak, M., Bronikowski, M., Tomczak, E., Marciniak, M. & Borysiuk, Z. (2018). Visual perception strategies of foil fencers facing right-versus left-handed opponents. *Perceptual and Motor Skills*, 125, 612-625.
- Witte, K. (2015). *Anwendung von VR für das Antizipationstraining - dargestellt am Beispiel des Kampfsports*. Paper presented at the 5. BISP-Symposium: „Individualisierte Trainings- und Wettkampfgestaltung“, Brühl. Download unter [http://www.bisp.de/SharedDocs/Downloads/BISP\\_Symposium/Symposium2015-AKII-Witte.pdf?\\_\\_blob=publicationFile&v=2](http://www.bisp.de/SharedDocs/Downloads/BISP_Symposium/Symposium2015-AKII-Witte.pdf?__blob=publicationFile&v=2).
- Wood, C. J. & Aggleton, J. P. (1989). Handedness in 'fast ball' sports: Do left-handers have an innate advantage? *British Journal of Psychology*, 80, 227-240.
- 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.
- Zentgraf, K., Heppe, H. & Fleddermann, M.-T. (2017). Training in interactive sports. *German Journal of Exercise and Sport Research*, 47, 2-14.

### Korrespondenzadresse

Dr. Florian Loffing, Institut für Sportwissenschaft,  
Carl von Ossietzky Universität Oldenburg, Ammerländer Heerstr. 114-118, 26129 Oldenburg  
E-Mail: [florian.loffing@uni-oldenburg.de](mailto:florian.loffing@uni-oldenburg.de)