

Prof. Dr. Kelvin Willoughby

Chairholder Stiftungsfonds Deutsche Bank Chair of Innovation Management and Entrepreneurship

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ACADEMIC EDUCATION

2008	Master of Laws (LL.M.) in Intellectual Property, University of Augsburg, Germany
1999	Doctor of Philosophy (Ph.D.) in Strategic Management, The University of Western Australia, Perth, Australia
1990	Postdoctoral Fellowship, University of California, Berkeley
1987	Doctor of Philosophy (Ph.D.) in Technology Studies, Murdoch University, Perth, Australia
1980	Bachelor of Arts (B.A. Hons. 1 st Class), Human Ecology, Murdoch University, Perth, Australia

PROFESSIONAL EXPERIENCE

since 2021	Chair of Innovation Management und Entrepreneurship, HHL Leipzig Graduate School of Management, Leipzig
2014-2021	Professor of Entrepreneurship and Intellectual Property, Skolkovo Institute of Science and Technology (Skoltech), Moscow, Russia
2015-2016	Associate Dean of Education, Skolkovo Institute of Science and Technology (Skoltech), Moscow, Russia
2010-2014	Professor of Entrepreneurship and Intellectual Property, Curtin University, Perth, Australia
2010	Visiting Professor and Research Associate, Chair of Corporate and Intellectual Property Law, Technical University of Munich (TUM), Munich, Germany



HONORS AND AWARDS - SELECTED

2022	Otto Mønsted Gæsteprofessorat, awarded by the Otto Mønsted Foundation for the Otto Mønsted Visiting Professorship at the Copenhagen Business School, Denmark
2019	Elevated to Senior Member status, IEEE (Institute of Electrical & Electronics Engineers)
2018	HRH Princess Maha Chakri Sirindhorn Award for contribution to educational and research collaboration between the Kingdom of Thailand and the Russian Federation (TRRT)
2007-2008	Max Planck Society Fellowship for International Scientific Cooperation, Max Planck Institute for Intellectural Property, Competition and Tax Law, Munich, Germany
2018-2022	Guest Professor, School of Intellectual Property, Nanjing University of Science and Technology, Nanjing, China
2018-2020	Adjunct Professor, School of Electrical Engineering, Computing and Mathematical Sciences, Curtin University, Australia
2011-2022	Visiting Professor, Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Kowloon
2012-2013	Resident Entrepreneur, Innovation Centre of Western Australia. Government of Western Australia
2007-2008	Diplôme d'honneur, Propriété Intellectuelle Européenne, EIPIN (European Intellectual Property Institutes Network): Strasbourg, Munich, Zurich, London, Alicante
2006	BioBusiness Alliance of Minnesota, Honorable Recognition. Recognition of profound impact on the future of biobusiness in Minnesota for work as Co-chair of the Minnesota Statewide Biobusiness Assessment Project, 2005-2006.



RESEARCH INTERESTS

- _ Intellectual property (IP) management for entrepreneurial ventures
- _ IP management for complex technology-intensive corporations
- _ National and local economic development and IP strategy
- _ Open innovation, co-creation and IP management
- _ IP strategy for modular products and systems
- _ IP strategy for innovation in software and artificial intelligence
- _ Technology transfer and commercialization of academic research
- Dynamics of innovation, science and technology
- _ Innovation strategy

TEACHING EXPERIENCE

- _ Entrepreneurship
- _ Innovation Management
- _ Intellectual Property Management
- _ Intellectual Property Law
- _ Technology Strategy
- _ Strategic Management
- Philosophy of Technology

Memberships and Affiliations

- AoM Academy of Management
- IEEE Institute of Electrical and Electronics Engineers
- Licensing Executives Society
- ATRIP International Association for the Advancement of Teaching and Research in Intellectual Property
- EPIP European Policy for Intellectual Property Association

SELECTED PUBLICATIONS

SELECTED REFEREED SCHOLARLY JOURNAL ARTICLES

"Different settings, different terms and conditions: The impact of intellectual property arrangements on co-creation project performance," *The Journal of Product Innovation Management* (August 2022, 2nd revise and re-submit). Anja Tekic, Kelvin W. Willoughby & Johann Füller.

"How Can Business Schools Generate and Appropriate Value in University-based Technological Innovation?" *International Journal of Innovation and Technology Management*. Under review, November 2022. Dmitry S. Smirnov & Kelvin W. Willoughby.

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"Product Modularity, Design Imitation and Intellectual Property: Creating Value Through Patent Strategy," *IEEE Engineering Management Review* (under review, November 2022). Georgy D. Klushin & Kelvin W. Willoughby.

"Global Innovation and Competition in Quantum Technology, Viewed Through the Lens of Patents and Artificial Intelligence," *International Journal of Intellectual Property Management* (February 2022, forthcoming). Zeki Can Seskir & Kelvin W. Willoughby. https://doi.org/10.1504/IJIPM.2021.10044326

"Reverse Innovation, International Patenting and Economic Inertia: Constraints to Appropriating the Benefits of Technological Innovation," *Technology in Society*, Volume 67, November 2021, 101712. Kelvin W. Willoughby & Nadezhda Mullina. https://doi.org/10.1016/j.techsoc.2021.101712

"Rethinking the Dynamics of Innovation, Science, and Technology: The Curious Case of Stirling Engines and Stirling Refrigerators," *Energy Research & Social Science*, Volume 79, September 2021, 102159. Dmitry S. Smirnov & Kelvin W. Willoughby. https://doi.org/10.1016/j.erss.2021.102159

"Contextual Factors Affecting Patent Licensing Provisions in Collaboration Agreements of Complex Technological Organizations," *International Journal of Intellectual Property Management*, 11, 3 (2021), 280-315. Punyapat Saksupapchon & Kelvin W. Willoughby. https://doi.org/10.1504/IJIPM.2020.10032645

"Intellectual Property Management, Dynamic Capabilities and Competitive Innovation in the Commercial Aircraft Industry," *International Journal of Intellectual Property Management*, 11, 3 (2021), 236-262. Punyapat Saksupapchon & Kelvin W. Willoughby. https://doi.org/10.1504/IJIPM.2020.10032446

"Endogenous innovation, outward-bound international patenting and national economic development," *The Journal of Technology Transfer*, 45, 3 (2020), 844–869. Kelvin W. Willoughby. https://doi.org/10.1007/s10961-018-9705-1

"Configuring intellectual property management strategies in co-creation: A contextual perspective," *Innovation: Organization and Management*, 22, 2 (2020), 128-159. Anja Tekic & Kelvin W. Willoughby. https://doi.org/10.1080/14479338.2019.1585189

"Co-creation — child, sibling or adopted cousin of open innovation?" *Innovation: Organization and Management*, 21, 2 (2019), 274-297. Anja Tekic & Kelvin W. Willoughby. https://doi.org/10.1080/14479338.2018.1530565

"Contextualized co-creation: Innovating with individual external contributors throughout the product life cycle," *International Journal of Product Development*, 22, 3 (2017), 230-245. Anja Tekic & Kelvin W. Willoughby. https://doi.org/10.1504/IJPD.2017.087380

"A knowledge-based system for assessing and managing intellectual property managerial risks for small-and-medium sized technological enterprises," *International Journal of Intellectual Property Management*, 7, 1/2 (2014), 57–83. C. F. Cheung, W. M. Wang, X. Xu & Kelvin W. Willoughby.

https://doi.org/10.1504/IJIPM.2014.062795

"What impact does intellectual property have on the business performance of technology firms?" *International Journal of Intellectual Property Management*, 6, 4 (2013), 316-338. Kelvin W. Willoughby. https://doi.org/10.1504/IJIPM.2013.057634



"Intellectual property management and technological entrepreneurship," *International Journal of Innovation and Technology Management*, 10, 6 (2013), 1-42. Kelvin W. Willoughby.

https://doi.org/10.1142/s0219877013400270

"How much does technology really matter in patent law? A comparative analysis of doctrines of appropriate patentable subject matter in American and European patent law," Federal Circuit Bar Journal, 18, 1 (2008), 63-138. Kelvin W. Willoughby.

"How do entrepreneurial technology firms really get financed, and what difference does it make?" *International Journal of Innovation and Technology Management*, 5, 1 (2008), 1-28. Kelvin W. Willoughby. https://doi.org/10.1142/s0219877008001266

"Interorganizational cooperation, knowledge intensity and the sources of innovation in the bioscience-technology industries," *Knowledge, Technology and Policy*, 18, 3 (2006), 56-73. Kelvin W. Willoughby & Peter Galvin. https://doi.org/10.1007/s12130-005-1005-z

"Technological semantics and technological practice: Lessons from an enigmatic episode in Twentieth Century technology studies," *Knowledge, Technology and Policy*, 17, 3-4 (2005), 11-43. Kelvin W. Willoughby. https://doi.org/10.1007/s12130-004-1002-7

"The Affordable Resources strategy and the Milieux Embeddedness strategy as alternative approaches to facilitating innovation in a knowledge-intensive industry," *The Journal of High Technology Management Research*, 15, 1 (2004), 91-121. Kelvin W. Willoughby. https://doi.org/10.1016/j.hitech.2003.09.006

"The virtualization of university education: Concepts, strategies and business models," *Journal of Applied Educational Technology*, 2, 1 (2004), 4-24. Kelvin W. Willoughby.

"Building internationally competitive technology regions: The Industrial-Location-Factors approach and the Local-Technological-Milieux approach," *Journal of International and Area Studies*, 7, 2 (2000), 1-36. Kelvin W. Willoughby.

"Generic strategies and action modes: A philosophical challenge for strategic management," *Journal of International Business and Economy*, Fall (2000), 69-90. Kelvin W. Willoughby.

"Informal communication, formal collaboration, and the growth of research-intensive entrepreneurial firms in the biotechnology industry," *Frontiers of Entrepreneurship Research*, November (1999), 571-585. Kelvin W. Willoughby.

"Transfer or generation? Biotechnology and local industry development," *Journal of Technology Transfer*, 15, 4 (1990), 31-38. Kelvin W. Willoughby and E. J. Blakely. https://doi.org/10.1007/BF02371521

"Local enterprise initiatives: Between state and market in Esperance," *Australian Journal of Public Administration*, 49, 1 (1990), 23-37. Kelvin W. Willoughby & J. Moon. https://doi.org/10.1111/j.1467-8500.1990.tb02249.x

"Economic development and technological change in rural Australia: Some critical policy issues," *Berkeley Planning Journal*, 4, 1 (1989), 53-82. Kelvin W. Willoughby. https://doi.org/10.5070/BP34113158

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SELECTED BOOKS AND MONOGRAPHS

Kelvin W. Willoughby, What Can Be Patented? Confronting the Confusion in Patent Law About Patent-Eligible Subject Matter (Saarbrücken: Scholars' Press, 2014). 216 pages. ISBN: 9783639700688.

Kelvin W. Willoughby, *Technology Choice: A Critique of the Appropriate Technology Movement* (London: Routledge, 2019). ISBN 9780367289690 (Hardback), 9780429308444 (eBook). 350 pages. First edition: (Boulder and San Francisco: Westview Press, 1990). ISBN: 0813378060.

Kelvin W. Willoughby, *Technology and the Competitive Advantage of Regions: A Study of the Biotechnology Industry in New York*, IURD Monograph No. 44 (Berkeley: University of California, 1993). 184 & xxii pages. Library of Congress (US), LC Control No.: 93622391.

Zhouying Jin (author) & Kelvin W. Willoughby (editor & co-translator), *Global Technological Change: From Hard Technology to Soft Technology*, First Edition (Bristol, UK; Portland, Oregon, USA: Intellect Books, 2005). 317 pages. ISBN: 9781841501246.

SELECTED BOOK CHAPTERS AND SECTIONS IN BOOKS

Kelvin W. Willoughby, "What Can Be Patented? Technological Innovation and the Contemporary Mess in Patent Law," pp. 171-178 of ИНТЕЛЛЕКТУАЛЬНЫЕ ПРАВА: ВЫЗОВЫ 21-го ВЕКА, Материалы Международной конференции, 14–16 ноября 2019 г., Под редакцией Э.П. Гаврилова, С.В. Бутенко (Томск: Издательский Дом Томского государственного университета, 2019). DOI:10.17223/9785946218559/26

Kelvin W. Willoughby, "Gifted Education, Scientific Research and Technological Innovation: The Philosophy and Practice of Skoltech," in *The 1st Thai-Russian Roundtable (TRRT): Collaboration on Gifted Education and Research* (Bangkok: Office of the Education Council, Kingdom of Thailand, 2018) pages 57-66.

Maximilian von Zedtwitz, Zeljko Tekic and Kelvin W. Willoughby, "Foreign R&D Investment in Russia: How to Translate into Innovation?" in *The Life of Russian Business:* (Re)cognizing, (Re)activating and (Re)configuring Institutions, edited by Tomas Casas i Klett and Yuliya Ponomareva (Information Age Publishing Inc., 2018), pages 141-146. ISBN-10: 164113450X ISBN-13: 978-1641134507

Kelvin W. Willoughby, "The local milieux of knowledge-based industries: What can we learn from a regional analysis of commercial biotechnology," in *Cities in Competition: Productive and Sustainable Cities for the 21st Century*, edited by J. Brotchie, M. Batty, E. Blakely, P. Hall, & P. Newton (London: Longman; Melbourne: Longman Australia, 1995), pages 252-285.

Kelvin W. Willoughby & U. E. Gattiker, "Technological competence, ethics and the global village: Cross-national comparisons for organization research," in *Handbook of Organizational Behavior*, edited by R. Golembiewski (New York & Basel: Marcel Dekker, 1993), pages 457-485.

Kelvin W. Willoughby & A. Morkel, "Orbital Engine Company," in *The Strategy Process: Contexts and Cases*, edited by James Brian Quinn and Henry Mintzberg (Englewood Cliffs, NJ: Prentice Hall, 1993), pages 309-323. [revised version of case] Republished in 3rd Edition (1999).



SELECTED PUBLISHED TECHNICAL MONOGRAPHS & GOVERNMENT/INDUSTRY REPORTS

Kelvin W. Willoughby, *Minnesota's Competitive Position in the BioBusiness Technology Industries*. St. Louis Park, MN: BioBusiness Alliance of Minnesota, 2011. 92 pages.

Christoph Ann (principle author), Kelvin W. Willoughby (collaborative author / Mitarbeiter) & Stephanie Bergmann (collaborative author/ Mitarbeiter), *Strategien zur Piraterieabwehr für den Mittelstand*. München: bayme vbm, Die bayerischen Metall- und Elektro-Arbeitgeber, 2011. 68 pages.

Kelvin W. Willoughby, *Biobusiness: Minnesota's Present Position and Future Prospects*. St. Louis Park, MN: BioBusiness Alliance of Minnesota, 2006. 102 pages.

Bernd Grohs, Kelvin W. Willoughby, et al., *Untersuchung der Wirkungsmechanismen von Kompetenzzentren am Beispeil ausgewählter Technologieregionen in Deutschland.* Report for Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie, Bonn. Munich: Roland Berger & Partner GmbH, International Management Consultants, 1998. 148 pages.

Kelvin W. Willoughby, *Utah's Bioscience Technology Industry Complex: A Census and Analysis of the Biotechnology, Medical Technology, and Life Systems Technology Industries in the State of Utah.* Salt Lake City: Utah Life Science Association & State of Utah, Division of Business and Economic Development, 1998. 161 & xxvi pages.

Kelvin W. Willoughby, New York's Evolving Bioscience Technology Industries: Managing Knowledge, Production and Services for Economic Development. Stony Brook, New York: State University of New York, Center for Biotechnology, 1997. 161 pages.

Kelvin W. Willoughby, *Biotechnology in New York: A Global Industry in a Global Community*. Stony Brook, New York: State University of New York, Center for Biotechnology, 1992. 190 & xii pages.

Kelvin W. Willoughby & J. Moon (coauthors), *An Evaluation of Local Enterprise Initiatives: The Case of Esperance* (Canberra: Australian Government Publishing Service, 1989). 48 pages. ISBN: 0644087617.

SELECTED CONFERENCE PAPERS

Punyapat Saksupapchon and Kelvin Willoughby, "The Coevolution of Intellectual Property Capabilities and Technology Capabilities in Large Complex Technological Organizations," 2022 IEEE International Conference on Industrial Engineering & Engineering Management (IEEM2002), Kuala Lumpur, Malaysia, 7-10 December 2022. (accepted paper IEEM22-A-0096)

Aleksei Kalinichenko and Kelvin Willoughby, "The Concept of Artificial Intelligence Viewed Through the Prism of Patent Information," EPIP 2022 Conference, The University of Cambridge, 14-16 September 2022, Cambridge, UK. https://ieem.org/public.asp?page=index.asp

Punyapat Saksupapchon and Kelvin Willoughby, "Mapping the Development of Corporate Intellectual Property Capabilities: A Framework for Large Complex Technological Organizations," EPIP 2022 Conference, The University of Cambridge, 14-16 September 2022, Cambridge, UK.



Dmitry Smirnov and Kelvin Willoughby, "How Can Business Schools Generate Value in the Commercialization of New Technology? Technological Innovation Laboratories and Intellectual Property Management as Leadership Channels for Business Schools," EPIP 2022 Conference, The University of Cambridge, 14-16 September 2022, Cambridge, UK.

Si Yang An, Chi Fai Cheung, Mei Na Cheng and Kelvin W. Willoughby, "A Roadmap of Information and Communication Technology-Oriented Product-Service Systems for Older Adults in Hong Kong," IEEE 2021 9th International Conference on Information and Education Technology (ICIET 2021), Okayama, Japan, March 27-29, 2021. Paper ID C068. Accepted for publication in *IEEE Explore* on 10 February 2021.

Kelvin W. Willoughby and Nadezhda Mullina, "Intellectual Property Strategy and Reverse Innovation," 81st Annual Meeting of the Academy of Management, virtual meeting, 30 July-3 August 2021.

Zeki Can Seskir and Kelvin W. Willoughby, "An Approach to AI-Enhanced Patent Analysis for Emerging Advanced Technology Industries: Insights from the Domain of Quantum Technology," 81st Annual Meeting of the Academy of Management, virtual meeting, 30 July-3 August 2021.

Dmitry S. Smirnov and Kelvin W. Willoughby, "What Comes First, Technology or Science? Clues from the Field of Energy Conversion Technology," 81st Annual Meeting of the Academy of Management, virtual meeting, 30 July-3 August 2021.

Nadezhda Mullina & Kelvin W. Willoughby, "Are Exports an Indicator of Innovation Flows?" ISPIM Connects Global 2020: Celebrating the World of Innovation - Virtual Conference, 6-8 December 2020. Event Proceedings: LUT Scientific and Expertise Publications: ISBN 978-952-335-566-8

Punyapat Saksupapchon & Kelvin W. Willoughby, "The Evolution of Patent Application Strategies of Companies in Commercial Aircraft Industry Through a Dynamic Capability Lens," Paper for the IEEE 4th Technology Innovation Management and Engineering Science International Conference (TIMES-iCON 2019), Faculty of Engineering, Mahidol University, Bangkok, Thailand, 11-13 December 2019.

Punyapat Saksupapchon & Kelvin Willoughby, "Contextual Factors Affecting Decisions About Intellectual Property Licensing Provisions in Collaboration Agreements for Open Innovation Projects of Complex Technological Organizations," 2019 IEEE International Symposium on Innovation and Entrepreneurship (TEMS-ISIE), Hangzhou, China, 24-26 October 2019.

Kelvin W. Willoughby & Nadezhda Mullina, "Global Innovation, Outbound International Patenting and Emerging Countries," Paper for R&D Management Conference, Research and Development Management Association, École Polytechnique and HEC Paris, Paris, France, 17-21 June 2019.

Anja Tekic & Kelvin W. Willoughby, "Intellectual property management in co-creation: Exploring the value of contextual and configurational perspectives for the development of strategy by employing the Qualitative Comparative Analysis methodology," Paper for the 79th Annual Meeting of the Academy of Management, Boston, USA, 9-13 August 2019.

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Anja Tekic & Kelvin W. Willoughby, "Construing the conceptual mess around co-creation: An Innovation Management Perspective," Paper for the 24th Innovation and Product Development Management Conference (IPDMC), Reykjavik University, Iceland, 11-13 June 2017.

Anja Tekic & Kelvin W. Willoughby, "Co-creation and open innovation: Related but distinct concepts in innovation management," Paper for the R&D Management Conference 2016 From Science to Society: Innovation and Value Creation, Cambridge University, United Kingdom, 3-6 July 2016.

Anja Tekic & Kelvin W. Willoughby, "The strategic coupling of intellectual property management and co-creation strategies," Paper for the 23rd Innovation and Product Development Management Conference, Glasgow, United Kingdom, 12-14 June 2016.

Kelvin W. Willoughby, "What impact does intellectual property have on the business performance of technology firms?" INFORMS (Institute for Operations Research and the Management Sciences) 2014 Annual Meeting, San Francisco, California, November 8-12, 2014.

Kelvin W. Willoughby, "Intellectual Property and Open Innovation: Friends or Foes?" Paper from Invited Lecture, 12th Annual Triple Helix International Conference, Tomsk, Russia, 11-13 September 2014.

Kelvin W. Willoughby, "The Rise of Regional Bioscience-Technology Industries in the United States" Paper from Invited Lecture, 12th Annual Triple Helix International Conference, Tomsk, Russia, 11-13 September 2014.

REVIEWER FOR SCHOLARLY JOURNALS

- _ Technovation. 2005 -
- World Patent Information. 2019 -
- Technological Forecasting and Social Change. 2019 –
- _ Innovation: Organization and Management. 2019 -
- _ International Journal of Innovation and Technology Management. 2019 -
- Journal of Knowledge Management. 2016 -
- _ SAGE Open. 2020 -
- IEEE Access. 2020 -
- _ International Journal of Intellectual Property Management. 2016 -

Editorial Board Member:

International Journal of Intellectual Property Management. 2020 -

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CURRENT RESEARCH PROJECTS

- _ The Strategic Intellectual Property Management of New Products in Complex Technological Organizations
 - Punyapat Saksupapchon, HHL; Kelvin Willoughby, HHL
- _ Patent Strategy for Modular Products
 - Georgy Klushin, HHL; Kelvin Willoughby, HHL
- _ Intellectual Property and International Pathways for Appropriating Value from Endogenous Technological Innovation
 - Nadezhda Mullina, HHL; Kelvin Willoughby, HHL
- _ Patent Protection for Artificial Intelligence and Machine Learning Technologies: Implications for Innovation Management
 - Aleksei Kalinichenko, HHL; Kelvin Willoughby, HHL
- _ Technological Innovation and the Quest for Sustainability: The Interplay of Internal and External Forces in the Development of Environment-friendly Products in the Plastics Industry
 - Philip Cichy, HHL; Kelvin Willoughby, HHL
- _ Entrepreneurship and Women
 - Rossitza Ivanova, HHL; Kelvin Willoughby, HHL
- _ Global Innovation in Quantum Technology
 - Zeki Can Seskir, Institute for Technology Assessment and Systems Analysis, Karlsruhe Institute of Technology; Kelvin Willoughby, HHL
- International Cultural Distance and Cross-border Co-inventing
 - Ralf Mischkowski, School of Management, University of St. Gallen; Maximilian von Zedtwitz, Department of International Economics, Government and Business, Copenhagen Business School; Kelvin Willoughby, HHL
- Innovation Strategies for the Energy Transition
 - Dmitry Smirnov, HHL; Kelvin Willoughby, HHL
- Technological Innovation for an Aging Society
 - Siyang An, Chi Fai Cheung and Mei Na Chang, Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University; Kelvin Willoughby, HHL
- _ The Tokenization of Intellectual Property Rights: The Potential for Improved Management of Intangible Assets Through the Sophisticated Application of Blockchain Technology
 - Dardan Mulaku, HHL; Kelvin Willoughby, HHL
- Strategies for the Appropriation of Economic Value by the Creators of Artistic Works: Cultivating Skill in Obtaining, Managing and Exploiting Intellectual Property Rights by Musicians in Africa
 - David Waweru, UNESCO-EU Specialist for Eastern Africa, Nairobi, Kenya; Kelvin Willoughby, HHL
- _ Crossing the Campus: Universities and Technology Entrepreneurship (Book project)
 - Kevin Fynn, Curtin University; Kelvin Willoughby, HHL