Curriculum Vitae Dr Lysanne Snijders

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ResearchGate: www.researchgate.net/profile/Lysanne Snijders; Twitter: twitter.com/LysanneSnijders

Employment history & Research training

2020-Present	Assistant Professor & NWO-Veni Fellow, Behavioural Ecology Group; Wageningen
	University & Research
2018-Present	Guest Researcher & Klaus-Tschira Boost Fund Fellow, Dept. Biology and Ecology of
	Fishes; Leibniz IGB-Berlin
2018-2019	Alexander von Humboldt Postdoc Fellow, Dept. Evolutionary Ecology; Leibniz IZW-
	Berlin
2017-2018	IGB Postdoc Fellow, Dept. Biology and Ecology of Fishes; Leibniz IGB-Berlin
2016-2017	Postdoc Researcher, Behavioural Ecology Group; Wageningen University & Research
2012-2017	Guest Researcher, Animal Ecology Department; Netherlands Institute for Ecology
2012-2016	PhD Student, Behavioural Ecology Group; Wageningen University & Research
	(cum laude: awarded to the top 3%)
2009-2011	Master Biology, Wageningen University & Research (cum laude: awarded when all
	courses are, on average, graded 8 or higher (out of 10), and the MSc thesis 9 or
	higher)
2005-2009	Bachelor Biology, Utrecht University (2007: Minor Management and Organization)

Doctorate

Title: To tweet or not to tweet: The role of personality in the social networks of great tits. Behavioural Ecology Group, Wageningen University & Research, **The Netherlands**. Date of defence: 29-04-2016. Promotor: Prof Marc Naguib; Co-promotor: Prof Kees van Oers.

MSc Theses

2010-2011	Differences in anti-predator behaviour between day and night for dabbling ducks in
	the Fraser Delta. Centre for Wildlife Ecology of Simon Frasier University, Canada.
2009	Behavioural features of a migratory Barnacle goose population (Branta leucopsis).
	Resource Ecology Group, Wageningen University & Research, The Netherlands.

- Wageningen University Online Course Development (2021; co-applicant; €25,000)
- <u>Niko Tinbergen Award</u> (2020: "The Ethologische Gesellschaft awards the Niko Tinbergen Award every other year to outstanding post-doc level researchers in behavioural biology")
- NWO-Veni (2019: 36 months full salary + research allowance; Start: 01.01.2020)
- Klaus-Tschira Boost Fund (2019: funds for student assistants, material and fieldwork expenses)
- Humboldt Postdoc Fellowship (2017: 24 months stipend + research allowance; Start: 01.06.2018).
- <u>IGB Postdoc Fellowship</u> (2017: 12 months stipend + research allowance)
- Max Planck Institute for Evolutionary Biology Travel Grant (2017)
- WIAS Postdoc Fellowship (2016: three months full salary)
- ISBE Travel Award (2016)
- Wageningen University Call for Innovation (2016; co-applicant; four months full salary)
- WIAS Graduate School PhD fellowship (2014: extended international lab visit travel allowance)
- ASAB Travel Grant (2014)
- Runner up Ethologische Gesellschaft Poster Prize at the Meeting in Bielefeld (2013)
- <u>Alfred Russel Wallace Award</u> Best MSc thesis Wildlife Ecology & Conservation Group (2009)

Teaching experience

 Coordinator and lecturer: Methods in Behavioural Biology, Wageningen University & Research (2020, 2021)

- Co-developer of the MOOC 'Animal Behaviour in Conservation', Wageningen University & Research on Edx.org (2021- Current)
- Lecturer: Animal Behaviour BSc course (2021)
- External advisor Stefanie White, University of the West Indies, MPhil project 'Guppies in a changing world: connecting social behavior with success in new environments' (2021- Current)
- Co-promotor: Haitham Mossad, Wageningen University and Research, <u>PhD project</u> 'Waterbirds response to anthropogenic stressors along the Nile in Egypt' (2020-Current)
- External advisor Theresa Schabacker, Museum für Naturkunde, <u>PhD project</u> 'Inter-individual variation in behaviour, physiology and cognition in a neotropical bat species, *Glossophaga soricina*' (2020-Current).
- Coordinator and lecturer: Behavioural Ecology (23433), Freie Universität Berlin (2019)
- Invited lecturer: Conservation Behaviour in the course Human-Wildlife Conflicts (23301), Freie Universität Berlin (2019)
- Supervisor at Wageningen University & Research, Humboldt University Berlin, Freie Universität: >15 MSc thesis students (2012-Current)
- Coordinator: (online) teaching innovation Wageningen University & Research: Animal Behaviour Bachelor Course (2016)
- Online lecturer: <u>Introduction to Animal Behaviour</u>, Massive Open Online Course (MOOC) on <u>www.Edx.org</u> (2016), >39,000 enrolments
- Teaching assistant: Wageningen University & Research: Ecology of Animal Life Histories (2012, 2014), Behavioural Ecology (2012, 2013, 2015, 2020, 2021), Animal Behaviour (2015, 2016), Life History Evolution (2016, 2021)
- Workshop instructor: NVG Animal Personality PhD Masterclass (Leiden, 2015)

Collaborations

- 2021-Current: Dr. Amy Deacon (University of the West Indies, Trinidad & Tobago)). MPhil project on foraging behaviour of guppies in novel environments.
- <u>2021-Current</u>: Prof Liesje Mommer (WUR, the Netherlands). Project on a multidisciplinary approach to mitigate experiences of conflicts related to human-wildlife interactions.
- <u>2020</u>- Current: Dr Mirjam Knörnschild (Museum für Naturkunde, Germany). PhD project on personality, cognition and physiology of tropical bats.
- <u>2020-Current</u>: Jolianne Rijks (Dutch Wildlife Health Centre, the Netherlands). Project on early detection of avian influenza using behaviour.
- <u>2019-2020</u>: Dr **Damien Farine** (Max Planck Institute of Animal Behaviour, Center for the Advanced Study of Collective Behaviour). Project on social network stability and pairing in geese. One joint publication.
- <u>2019-Current</u>: Dr Tanja Straka (TU Berlin, Germany), Dr Michael Strohbach (TU Braunschweig, Germany) and William Lynn (Clark University, USA). Project on Moral Philosophy in Conservation practice.
- <u>2018-Current</u>: Dr Christian Voigt (Leibniz-IZW, Germany). Project on personality, sociality and migration strategies in bats.
- <u>2018-Current</u>: Prof Colleen Cassady St Clair (University of Alberta, Canada), Dr Carolina Doran (Leibniz-IGB, Germany), Rob Appleby BSc (Griffith University, Australia), Dr Jorge Tobajas González (University of Castilla la Mancha, Spain). On-going project on the effectiveness of animal conditioning in reducing Human-Wildlife Conflict. Three joint publications with CD.
- <u>2017-Current</u>: Prof **Daniel Blumstein** (UCLA, USA), Dr **Oded Berger-Tal** (Ben Gurion University of the Negev, Israël) and Dr **Alison Greggor** (San Diego Zoo, Institute for Conservation Research, USA). On-going project on systematic reviews in animal behaviour for conservation. Two joint publications (Three with DB and AG).
- <u>2017</u>: Dr **Daniel Franks** (University of York, UK) and Dr **Christina Stanley** (University of Chester, UK & West African Primate Conservation Action Research Group, Ghana). Project on animal social network theory in conservation. One joint publication.
- 2016-Current: Prof Jens Krause (Humboldt University & Leibniz-IGB, Germany), Prof Stefan Krause (Technische Hochschule Lübeck, Germany) and Prof Indar Ramnarine (University of the West Indies, Trinidad & Tobago). Ongoing project on social networks and foraging in the wild. Two joint publications (Three with JK).

- <u>2015-Current</u>: Dr Ralf Kurvers (Max Planck Institute for Human Development, Germany). Project
 on collective decision making, geese social networks and on-going project on social foraging. Four
 joint publications.
- <u>2015</u>: Prof **David McDonald** (University of Wyoming, USA). Project on social network analysis.
- <u>2015</u>: Dr **Max Wolf** (Leibniz-IGB, Germany). Project on collective decision making. One joint publication.
- <u>2012-2016</u>: Dr **John Burt** (University of Washington, USA). Project on spatially tracking social networks of small songbirds. One joint publication.
- <u>2012-Current</u>: Prof Marc Naguib (WUR, the Netherlands), Prof Kees van Oers (NIOO-KNAW & WUR, the Netherlands). Personality and social networks in great tits.
- <u>2009-2011</u>: Prof **Ron Ydenberg** (Simon Fraser University, Canada). Project on foraging and parental care in ducks and geese. One joint publication.

International activities – excluding activities in The Netherlands

International workshops and conferences

Kevnote

- Ethologische Gesellshaft Meeting: Invited keynote (Tinbergen lecture) Berlin, **Germany** (Feb, 2022)
- Oikos Sweden: Invited keynote Uppsala, **Sweden** (Feb, 2019): "Insights from social animals: uncovering the causes and consequences of a good social life"

Other

- (Virtual) St Andrews Seminar Series: invited oral presentation St Andrews, UK (2021)
- ASAB & ABS Animal Behaviour Twitter Conference: Twitter presentation, World Wide (2021)
- <u>(Virtual) Seminar FitzPatrick Institute of African Ornithology</u> (University of Cape Town): invited oral presentation Cape Town, **South Africa** (2020)
- Systematic Map & Review Meeting: presenter/participant digital, World Wide (2020)
- <u>Digital lab meeting Niels Dingemanse</u> -Behavioural Ecology (LMU München): invited oral presentation München, **Germany** (2020)
- 13th Forum on the Internationalization of Sciences and Humanities: invited oral presentation Berlin, **Germany** (2019)
- <u>Compassionate Conservation & Coexistence Summit</u>: invited oral presentation Yellowstone, USA (2019)
- Wildlife Research and Conservation: invited oral presentation—Berlin, Germany (2019)
- Biomove training group: invited seminar talk Potsdam, **Germany** (2019)
- ZSL Symposium: Linking behaviour to populations and communities: how can behavioural ecology inform conservation; poster presentation London, **UK** (2018)
- Göttinger Freiland Tage: Social complexity; oral presentation Göttingen, Germany (2017)
- Systematic Review for Conservation Workshop; participant Negev, Israel (2017)
- <u>Behaviour</u>; three oral presentations New castle, **UK**; Cairns, **Australia**; Estoril, **Portugal** (2013, 2015, 2017)
- ISBE; two oral presentations New York, USA & Exeter, UK (2014, 2016)
- Behaviour, Physiology and Genetics of Wildlife; oral presentation Berlin, Germany (2015)
- <u>Meeting of the Ethologische Gesellschaft</u>; poster presentation and oral presentation Bielefeld & Hamburg, **Germany** (2013, 2015)
- ASAB Winter meeting; poster presentation London, UK (2013, 2014)

International research activities

- Postdoctoral scientist IZW, Berlin, **Germany** (2018-2019): 19 months
- Collection of field data Pape, Latvia (2019): 2 weeks
- Postdoctoral scientist IGB, Berlin, **Germany** (2017-2018): 13 months
- Collection of field data **Trinidad & Tobago** (2016-2020): 5 x 3 weeks
- Visiting scientist Technische Hochschule Lübeck, **Germany** (2017): <u>1 week</u>
- Visiting scientist University of Wyoming, Wyoming, USA (2015): 5 weeks
- Laboratory visit & talk University of Colorado, USA (2015): 1 day
- Master thesis Simon Fraser University, Burnaby, Canada (2010-2011): 6 months
- Collection of field data Saaremaa, Estonia (2009): 2 weeks

Other professional international activities

- Bird banding, Wild Research B.C., **Canada** (2011): spanning approx. <u>3 months</u> during MSc thesis
- Coordinator, nature education project, Centre for Sustainability Palawan, the Philippines (2010): 3 months

Other academic activities

Editor

Animal Behaviour (2022-)

Review editor (2020-Current)

Frontiers in Conservation Science - Animal Conservation

Editorial board member (2021- Current)

Behavioral Ecology

Manuscript reviewer

Advances in the Study of Behavior, Animal Behaviour, Behavioral Ecology and Sociobiology, Behavioral Ecology, Behaviour, Current Zoology, eLife, Ethology, Frontiers in Conservation Science, Frontiers in Ecology & Evolution, Ibis, Integrative Zoology, Journal of Animal Ecology, Journal of Avian Biology, Journal of Ornithology, Methods in Ecology & Evolution, Oikos, PLoS ONE, Primates, Proceedings of the Royal Society B, Philosophical Transactions of the Royal Society, Royal Society Open Science, Scientific Reports, Trends in Ecology & Evolution. For a recent overview see my Publicas Publicas page.

Grant reviewer

Wageningen Institute of Animal Sciences (WIAS) Graduate School; The Leakey Foundation; Zukunftskolleg, University of Konstanz; Centre for the Advanced Study of Collective Behaviour (CASCB), University of Konstanz & MPI of Animal Behavior; FWF Austrian Science Fund.

PhD examiner

Geoffrey Pierre François Mazué, Information transfer in fish shoals, The University of Sydney

Seminar organisation and working group activities

- Redactie Advies Raad member Bionieuws
- Member writing team ASG Narrative 'Climate Biodiversity Ecosystems Natural Resource Use'
- Invited speaker AlumNode (German Scholar Organisation) on Networking in Academia (2021)
- Invited speaker 'Wild' Ideas: Dialogues on Human-Wildlife Interactions (WUR) (2021)
- Kascommissie NVG (Netherlands Behavioral Biology Society) (2021-Current)
- Teamleader in the People Animals Nature (PAN Works) an independent non-partisan think-tank dedicated to the wellbeing of animals (2020-Current)
- Organising member 9th international Conference of Poeciliid Biologists (2020-Current)
- Sounding board member of the ASG working group Vitality & Workload (2020-Current)
- Member and Twitter coordinator of 'Animal Behaviour in Conservation' working group of the international Society for Conservation Biology (SCB) (2018-Current)
- Member 'Commissie Vleermuisvangen' Dutch organisation that reviews applications for catching bats in the Netherlands (2018-Current)
- Member Future For Nature Academy (2016-Current)
- Organising member of the workshop Communication Strategies for Women in Academia (On hold)
- Abstract reviewer for the International Conference for Conservation Biology (ICCB 2019)
- Associated member of the BioMove Research Training Group (2018-2019)
- Organising member of the 2019 IZW 'Symposium Human-Wildlife relationships: coming from two sides' (2018-2019)
- Organising member of the IZW Academic Writing working group (2018-2019)
- Member of the IGB Postdoc society (2017)
- Member of the IGB Open Access Fund working group (2017)
- Reviewer for submissions of oral presentations to the international WAFL conference (2017)

- Organising member of the <u>Wageningen Evolution and Ecology Seminars</u>. I have hosted several seminars and master classes for internationally renowned behavioural scientists. (2012-2016)
- Member of activities committee at NIOO-KNAW (2013-2015)
- Member of a PhD selection committee at NIOO-KNAW (2013-2014)
- Coordinator of the Behavioural Ecology Journal Club (2013)

Public outreach

Speaking for and interacting with the general public at: CineScience, Dutch Bird Fair, Leibniz-Kolleg Science Slam, Open days NIOO, Open days WUR, SoapBox Science; Twents Carmelcollege de Thij; Wereld Haven Dagen Rotterdam; Weblog writing: Beleef de Lente Vogelbescherming NL (2012-2017), NIOO-KNAW 'Dr Ecologie' (2015-2016), 'Exploring Conservation Conflicts' (2019-Current), Personal website: www.lysannesnijders.com. Popular science writing and (radio or tv) interviews (e.g. Bionieuws, British Ornithological Union, EditieNL, Kijk, Landleven, New Scientist, NRC Handelsblad, Resource, Vogelbescherming Vlaanderen, Vroege Vogels Radio, Vroege Vogels Podcast, Zoogdier). Popular science vlogging: NIOO-KNAW 'Dokter Ecologie', TracesDreams; Popular science news editor: Nature Today International (2017-2018); Online teaching: SchoolTV, MOOC, 'Expert supervisor' Candea College; Twitter (2009-Current).









Publications

Peer-reviewed

- **(20)** Snijders L, Thierij NM, Appleby R, St. Clair CC, Tobajas J (2021). Conditioned taste aversion as a tool for mitigating human-wildlife conflicts. *Frontiers in Conservation Science*. Accepted.
- (19) Schabacker T, Lindecke O, Rizzi S, Marggraf L, Pētersons G, Voigt CC, Snijders L (2021). *In situ* novel environment assay reveals acoustic exploration as a repeatable behavioral response in migratory bats. *Scientific Reports* 11:8174.
- (18) Snijders L, Krause S, Tump AN, Breuker M, Ortiz C, Rizzi S, Ramnarine IW, Krause J & Kurvers RHJM (2021). Causal evidence for the adaptive benefits of social foraging in the wild. *Communications Biology* 4:1-8.
- (17) Kurvers RHJM, Prox L, Farine DR, Jongeling C, Snijders L (2020). Season-specific carry-over of early-life associations in a monogamous bird species. *Animal Behaviour* 164: 25-37.
- **16) Snijders L**, Kurvers R, Krause S, Tump A, Ramnarine I, Krause J (2019). Females facilitate male food patch discovery in a wild fish population. *Journal of Animal Ecology* 88: 1950-1960.
- **(15)** Naguib M, Diehl J, van Oers K, **Snijders L** (2019). Repeatability of signalling traits in the avian dawn chorus. *Frontiers in Zoology* 16: 1-11.
- (14) Snijders L, Greggor AL, Hilderink F, Doran C (2019). Effectiveness of animal conditioning interventions in reducing human-wildlife conflict: A systematic map protocol. *Environmental Evidence* 8: 1-10.
- (13) Berger-Tal O, Greggor AL, Macura B, Adams CA, Blumenthal A, Bouskila A, Candolin U, Doran C, Fernandez-Juricic E, Gotanda KM, Price C, Putman B, Segoli M, Snijders L, Wong BBM, Blumstein DT (2019). Systematic maps and reviews as tools for applying behavioral ecology to management and policy. *Behavioral Ecology* 30: 1-8.
- (12) Snijders L, Kurvers RHJM, Krause S, Ramnarine IW, Krause J (2018). Individual- and population-level drivers of consistent foraging success across environments. *Nature Ecology and Evolution* 2: 1610-1618.
- (11) Snijders L, Blumstein DT, Stanley CR, Franks DW (2017) Social network theory can help wildlife conservation. *Trends in Ecology and Evolution* 32: 567-577.
- (10) Snijders L, Nieuwe Weme LE, De Goede P, Savage JL, van Oers K, Naguib M (2017) Context-dependent effects of transmitter attachment. *Avian Biology* 48: 650-659.
- (9) Snijders L, Naguib M. (2017) Communication in animal social networks: a missing link? *Advances in the study of Behaviour* 49: 297-359.
- **(8) Snijders L**, Naguib M, van Oers K (2017) Dominance rank and boldness predict social preference in great tits. *Behavioral Ecology* 28: 398-406.
- (7) Snijders L, van Oers K, Naguib M (2017) Sex-specific responses to territory intrusions in a communication network: evidence from radio-tagged great tits. *Ecology and Evolution* 7: 918-927.
- **(6)** Naguib M, van Rooij EP, **Snijders L**, van Oers K (2016). To sing or not to sing: seasonal changes in singing vary with personality in wild great tits. *Behavioral Ecology* 27: 932-938.
- **(5) Snijders L**, van Rooij EP, Henskens MFA, van Oers K, Naguib M (2015) Dawn song predicts behaviour during territory conflicts in personality-typed great tits. *Animal Behaviour* 109: 45-52.
- **(4)** Clément R, Wolf M, **Snijders L**, Krause J, Kurvers RHJM (2015). Information transmission via movement behaviour improves decision accuracy in human groups. *Animal Behaviour* 105: 85-93.

- (3) Snijders L, van Rooij EP, van der Eijk J, de Goede P, van Oers K, Naguib M (2015). Song trait similarity varies with social structure. *PLoS ONE* 10: e0116881.
- **(2) Snijders L**, van Rooij EP, Burt, JM, Hinde, CA, van Oers, K, Naguib, M (2014). Social networking in territorial great tits: slow explorers have the least central social network positions. *Animal Behaviour* 98: 95-102.
- (1) Jonker RM, Kuiper MW, Snijders L, Van Wieren SE, Ydenberg RC, Prins HH (2011). Divergence in timing of parental care and migration in barnacle geese. *Behavioral Ecology* 22: 326-331.

Invited commentaries and book chapters

- **(e)** Smith BP, **Snijders L**, Tobajas J, Whitehouse-Tedd K, van Bommel L, Pitcher B, St. Clair CC, Appleby RG, Jordan N, Greggor AL (in press). 'Management techniques for deterring and repelling wildlife' in Smith BP, Waudby H, Alberthsen C (eds) *Ethical wildlife research in Australia*. CSIRO Publishing, Melbourne, Australia.
- (d) Snijders L (2020). Ecological and evolutionary dynamics of elephant rewilding. Animal Sentience 28(6): 1-4.
- (c) Snijders L (2019). Wissenschaftliche Netzwerke: Global denken lokal handeln. Proceedings of Die Kraft der (wissenschaftlichen) Netzwerke 13. Forum zur Internationalisierung der Wissenschaft: 31-32.
- **(b)** Berger-Tal O, Greggor AL, Macura B, Adams CA, Blumenthal A, Bouskila A, Candolin U, Doran C, Fernandez-Juricic E, Gotanda KM, Price C, Putman B, Segoli M, **Snijders L**, Wong BBM, Blumstein DT (2019). Systematic evidence synthesis as part of a larger process: a response to comments on Berger-Tal et al. *Behavioral Ecology* 30: 14-15.
- (a) van Leeuwen EJC, **Snijders L** (2019). Knowledge is power but wisdom is liberty. A comment on Thompson "Supporting Ape Rights: Finding the Right Fit Between Science and the Law". *ASEBL Journal* 14: 46-48.

Preprints

- (19) Schabacker T, Lindecke O, Rizzi S, Marggraf L, Pētersons G, Voigt CC, Snijders L (2020). *In situ* novel environment assay reveals acoustic exploration as a repeatable behavioral response in migratory bats. *BioRxiv*. DOI: https://doi.org/10.1101/2020.12.16.423043
- (18) Snijders L, Krause S, Tump AN, Breuker M, Ortiz C, Rizzi S, Ramnarine IW, Krause J & Kurvers RHJM (2020). Causal evidence for the adaptive benefits of social foraging in the wild. *BioRxiv*. DOI: https://doi.org/10.1101/2020.08.17.254250 (Now published in *Communications Biology*)
- (17) Kurvers RHJM, Prox L, Farine DR, Jongeling C, Snijders L (2019). Season-specific carry-over of early-life associations in a monogamous bird species. *BioRxiv*. DOI: https://doi.org/10.1101/785345 (Now published in *Animal Behaviour*)
- (16) Snijders L, Kurvers RHJM, Krause S, Tump AN, Ramnarine IW, Krause J (2018). Females facilitate male patch discovery in a wild fish population. *BioRxiv*. DOI: https://doi.org/10.1101/478537 (Now published in *Journal of Animal Ecology*)
- (12) Snijders L, Kurvers RHJM, Krause S, Ramnarine IW, Krause J (2018). Individual- and population-level drivers of consistent foraging success across environments. *BioRxiv*. DOI: https://doi.org/10.1101/260604 (Now published in *Nature Ecology and Evolution*)

Published datasets

- (18) Snijders L, Krause S, Tump AN, Breuker M, Ortiz C, Rizzi S, Ramnarine IW, Krause J & Kurvers RHJM (2020). Data from: Causal evidence for the adaptive benefits of social foraging in the wild. *Open Science Framework* https://osf.io/csaig/
- (15) Naguib M, Diehl J, van Oers K, Snijders L (2019). Data from: Repeatability of signalling traits in the avian dawn chorus. *Dryad Digital Repository*. https://doi.org/10.5061/dryad.r1s93g8

- (10) Snijders L, Nieuwe Weme LE, de Goede P, Savage JL, van Oers K, Naguib M (2017). Data from: Context-dependent effects of radio transmitter attachment on a small passerine. *Dryad Digital Repository*. https://doi.org/10.5061/dryad.j4v4b
- **(8) Snijders L**, Naguib M, van Oers K (2016). Data from: Dominance rank and boldness predict social attraction in great tits. *Dryad Digital Repository*. https://doi.org/10.5061/dryad.576bs
- (7) Snijders L, van Oers K, Naguib M (2017). Data from: Sex-specific responses to territorial intrusions in a communication network: evidence from radio-tagged great tits. *Dryad Digital Repository*. https://doi.org/10.5061/dryad.00v20

Author contribution

Publication:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	a	b	c	d	e
Conceptualization of research idea OR			X					X	X	X	X			X		X		X	X	X	X		X	X	
Further development of research idea	X	X			X		X					X	X		X		X								X
Primary data collection OR	X	X	X			X		X		X		X				X		X	x						
Additional data collection				X	x		X								x					X					
Primary data analyses OR		X	X		X		X	X		X		X			X	X		X	X	X					
Additional data analyses	X																X								
Writing of first manuscript draft OR		X	X		X		X	X	X	X	x	X		X		X	X	X	x		X		X	X	
Contribution to writing of manuscript	X			X		X							x		X					X		X			X
Logistical contributions																X		X	X						