

CV Oscar Kjell

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Personal information

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I develop and validate ways to measure psychological constructs using *psychometrics* and *artificial intelligence* (AI) such as *natural language processing* and *machine learning*. I am the developer of the R-package *text* (www.r-text.org), which provides powerful functions tailored to analyse text data for testing research hypotheses in social and behavioural sciences. Using AI, as compared with traditional rating scales, we can (more) accurately *measure* psychological constructs; *differentiate* between similar constructs (such as worry and depression); as well as depict the content individuals use to *describe* their states of mind. I am, for example, applying these methods to better understand subjective well-being and to compare harmony in life versus satisfaction with life. I am particularly interested in sustainable well-being; how pursuing different types of well-being might bring about different social and environmental consequences. I am a co-founder of WordDiagnostics, where we apply these AI methods in a decision support system for diagnosing and assessing psychiatric disorders.

Education

2012 – 2018 PhD in Psychology (Lund University, Sweden)
2009 – 2010 MSc in Applied Positive Psychology (University of East London, England)
2005 – 2008 BSc Psychology (University of Westminster, England)
2003 – 2004 Practical Philosophy Course A; and Business Course A (Uppsala University, Sweden)
2001 – 2002 Nuclear, Biological and Chemical safety course (Umeå University, Sweden)

Relevant Work and Teaching Experiences

2020 – ongoing International postdoc at Lund University, Stony Brook University (Department of Computer Science) and University of Copenhagen (Department of Computer Science)
2018 – 2019 Researcher (approx. 80%) and Teacher (approx. 20%) at the Department of Psychology
2018 Co-founder of WordDiagnostics, developing an AI-based decision support system for psychiatric disorders
2016 Committee Member, the Psychology Department Board; Chairperson, the PhD student group
2012 – 2016 Visiting Lecturer at the MSc in Applied Positive Psychology (PT; University of East London, UK)
2009 Visiting Lecturer, Cognitive Psychology and Neuroscience (PT; University of Westminster London, UK)
2008 – 2009 Coordinator at the Psychiatric Rehabilitation Association (London, UK)

Supervision of PhD students

2021 – ongoing Zhuojun Gu, project entitles: *Developing person-centred computational language assessments for diagnosing depression and anxiety.*

Peer-Reviewed Publications

- Kjell, O. N. E., Sikström, S., Kjell, K., & Schwartz, H. A. (2022). Natural Language Analyzed with AI-based Transformers Predict Traditional Well-Being Measures Approaching the Theoretical Upper Limits in Accuracy. *Scientific Reports*. <https://www.nature.com/articles/s41598-022-07520-w>
- Kjell, O.N.E., Daukantaitė, D. & Sikström S., (2021) Computational Language Assessments of Harmony in Life –not Satisfaction with Life or Rating Scales– Correlate with Cooperative Behaviours. *Frontiers, Topic: Semantic Algorithms in the Assessment of Attitudes and Personality*.
- Wong, P. T., Arslan, G., Bowers, V. L., Peacock, E. J., Kjell, O. N. E., Ivtzan, I., & Lomas, T. (2021). Self-transcendence as a buffer against COVID-19 suffering: The development and validation of the self-transcendence measure-B. *Frontiers in Psychology*, 12.
- Sikström, S., Dahl, M., Lettmann, H., Alexandersson, A., Schwörer, E., Stille, Kjell, O. N. E., Åse Innes-Ker, & Ngaosuvan, L. (2021). What you say and what I hear—Investigating differences in the perception of the severity of psychological and physical violence in intimate partner relationships. *PLoS one*, 16(8), e0255785.
- Kjell, O. N. E., & Diener, E. (2020). Abbreviated Three-Item Versions of the Satisfaction with Life Scale and the Harmony in Life Scale Yield Improved Psychometric Properties. *Journal of Personality Assessment*.
- Kjell, O.N.E., Kjell, K, Garcia D., & Sikström S., (2019) Semantic measures: Using natural language processing to measure, differentiate, and describe psychological constructs. *Psychological Methods*.
- Marcusson-Clavertz, D., West, M., Kjell, O. N. E., & Somer, E. (2019) A Daily Diary Study on Maladaptive Daydreaming, Mind Wandering, and Sleep Disturbances: Examining Within-Person and Between-Persons Relations. *Under review at PLoS ONE*.
- Marcusson-Clavertz, D., Kjell, O.N.E, Persson, S. D., & Cardeña, E. (2019). Sad mood and poor sleep are related to task-unrelated thoughts and experience of diminished cognitive control. *Scientific Report*.
- Marcusson-Clavertz, D., West, M., Kjell, O. N. E., & Somer, E. (2019) A daily diary study on maladaptive daydreaming, mind wandering, and sleep disturbances: Examining within-person and between-persons relations. *PLoS ONE*.
- Marcusson-Clavertz, D., Kjell, O.N.E, Persson, S. D., & Cardeña, E. (2019). Online validation of combined mood induction procedures. *PLoS ONE*, 14(6).
- Marcusson-Clavertz, D., & Kjell, O.N.E. (2018). Psychometric Properties of the Spontaneous and Deliberate Mind Wandering Scales. *European Journal of Psychological Assessment*.
- Ivtzan, I., Young, T., Lee, H. C., Lomas, T., Daukantaitė, D. & Kjell, O.N.E. (2017) Mindfulness based flourishing program: A cross-cultural study of Hong Kong Chinese and British participants. *Journal of Happiness Studies*.
- Kjell, O.N.E., Daukantaitė, D., Hefferon, K., & Sikström, S., (2016). The Harmony in life scale complements the Satisfaction with life scale: Expanding the conceptualization of the cognitive component of Subjective well-being. *Social Indicators Research*.
- Garcia, D., Kjell, O.N.E., Sikström, S., & Archer, T. (2016). Using Language and Affective Profiles to Investigate Differences between Individuals. *Clinical and Experimental Psychology*.
- Garcia, D., Anckarsäter, H., Kjell, O.N.E., Archer, T., Rosenberg, P., Cloninger, C.R., & Sikström, S. (2015). Agentic, communal, and spiritual traits are related to the semantic representation of written narratives of positive and negative life events. *Psychology of Well-Being*.
- Garcia, D., Nima, A.A., & Kjell, O.N.E. (2014). The Affective Profiles, Psychological Well-Being, and Harmony: Environmental Mastery and Self-acceptance Predict the Sense of a Harmonious Life. *PeerJ*.
- Kjell, O.N.E., & Thompson, S. (2013) Exploring the impact of positive and negative emotions on cooperative behaviour in a Prisoner's Dilemma Game. *PeerJ*.
- Kjell, O.N.E., Nima A.A., Sikström S. Archer, T., & Garcia D., (2013). Iranian and Swedish Adolescents: Differences in Personality Traits and Well-Being. *PeerJ*.

Kjell, O.N.E. (2011). Sustainable Well-Being: A Potential Synergy between Sustainability and Well-Being Research. *Review of General Psychology*. 15(3), 255-266.

Patents

Kjell, O.N.E., Kjell, K., & Sikström S., (2018) Method for determining a representation of a subjective state of an individual with vectorial semantic approach. Status: Pending. US Patent App. 17/040,697, 2021

In revision

Kjell, O. N. E., Giorgi, S., & Schwartz, H. A. (2021, April 16, under revision at *Psychological Methods*). Text: An R-package for Analyzing and Visualizing Human Language Using Natural Language Processing and Deep Learning. <https://doi.org/10.31234/osf.io/293kt>.

Nilsson, A., Hellryd E. & Kjell, O. N. E. (2022, under revision at *PLOSone*). Doing Well-Being: Self-Reported Activities Are Related to Subjective Well-Being.

Pre-prints

Sikström, S., Kjell, O. N. E., & Kjell, K. (2018, October 25). Semantic Excel: An Introduction to a User-Friendly Online Software Application for Statistical Analyses of Text Data. <https://doi.org/10.31234/osf.io/z9chp>.

PhD Thesis

Kjell, O.N.E. (2018). Conceptualizing and Measuring Well-Being Using Statistical Semantics and Numerical Rating Scales. *Lund University*.

Chapters

Kjell O.N.E., Kjell K., Garcia D., Sikström S. (2020) Prediction and Semantic Trained Scales: Examining the Relationship Between Semantic Responses to Depression and Worry and the Corresponding Rating Scales. In: Sikström S., Garcia D. (eds) *Statistical Semantics*. Springer, Cham. https://doi.org/10.1007/978-3-030-37250-7_5

Kjell, O.N.E., Kjell K., Garcia D., Sikström S. (2020) Semantic Similarity Scales: Using Semantic Similarity Scales to Measure Depression and Worry. In: Sikström S., Garcia D. (eds) *Statistical Semantics*. Springer, Cham. https://doi.org/10.1007/978-3-030-37250-7_4

Sikström S., Kjell O.N.E., Kjell K. (2020) SemanticExcel.com: An Online Software for Statistical Analyses of Text Data Based on Natural Language Processing. In: Sikström S., Garcia D. (eds) *Statistical Semantics*. Springer, Cham. https://doi.org/10.1007/978-3-030-37250-7_6

Garcia D., Al Nima A., Kjell O.N.E., Granjard A., Sikström S. (2020) The (Mis)measurement of Happiness: Words We Associate to Happiness (Semantic Memory) and Narratives of What Makes Us Happy (Episodic Memory). In: Sikström S., Garcia D. (eds) *Statistical Semantics*. Springer, Cham. https://doi.org/10.1007/978-3-030-37250-7_10

Garcia, D., Kjell, O.N.E., & Sikström, S. (2016). A Collective Picture of What Makes People Happy: Words Representing Social Relationships, not Money, are Recurrent with the Word 'Happiness' in Online Newspapers. Chapter in *The Psychology of Social Networking*. Publisher: DeGruyer Open.

Selected Conference Presentations

Kjell, K., Kjell, O.N.E., & Sikström, S. (2019). Semantic Measures Capture Rating Scale Items for Depression and Anxiety Well. *The 10th Conference of the International Society for Affective Disorders*, London, England.

Kjell, O.N.E., Daukantaitė, D., Hefferon, K., & Sikström, S. (2014) The Harmony in Life Scale Complements the Satisfaction with Life Scale: Expanding the Conceptualization and Measurement of the Cognitive Component of Subjective Well-Being. *European Conference on Positive Psychology*, Amsterdam, Netherlands.

- Garcia, D., Kjell, O.N.E., & Sverker Sikström (2014) Happy but Dark: Using Quantitative Semantics to Investigate Facebook Status Updates. 26th Association for Psychological Science Annual Convention. San Francisco, California, USA.
- Garcia, D., Kjell, O.N.E., S Sikström (2013) The Dark Triad: Happiness and Words Related to Happiness. *International Positive Psychology Congress*.
- Kjell, O.N.E., Hefferon K., Garcia D., Sikström S. (2013). Enhancing Environmental and Social Sustainability: Harmony with life as a Complement to Satisfaction with Life. *International Positive Psychology Congress*, Los Angeles, U.S.
- Kjell, O.N.E., Garcia D., Sikström S. (2013). Semantic Quantifications of Word-associations to 'Happiness' Predict Satisfaction - Not Emotional Well-Being. *International Positive Psychology Congress*, LA, U.S.A.
- Garcia D., Kjell, O.N.E., Sikström S. (2013). The Dark Triad: Happiness and Words Related to Happiness. *International Positive Psychology Congress*, Los Angeles, U.S.
- Garcia D., Kjell, O.N.E., Sikström S. (2013). The Happy Update: Self-reported Happiness Linked to Semantic Representations of Status Updates in Facebook. *International Positive Psychology Congress*, L.A., U.S.A.
- Moreno, F., Kjell, O.N.E., Andersson Arntén, A-C., Sikström S., Archer, T., Garcia D., (2013). Work Climate and Virtues Predict Positive Emotions and Performance at Call Centers. *International Positive Psychology Congress*, Los Angeles, U.S.
- Kjell O.N.E., & Groome, D. (2009). Attentional Control in the Asymmetry of Stroop-like pitch and colour paradigms. *The British Psychological Society Annual Conference*, Brighton, U.K.

Competitive Funding and Awards

- 2021 Funding from Marianne och Marcus Wallenbergs Stiftelse for a 5-year research project: "AI-based Language Methods for Improving Diagnostic, Monitoring, and Outcomes of Depression and Anxiety" (6 000 000 SEK; MMW 2021.0058).
- 2020 Funding from eSENCE and the Department of Psychology for a PhD Student, project entitled "Developing person-centred computational language assessments for diagnosing depression and anxiety" (1 200 000 SEK).
- 2020 Funding from VINNOVA for project entitled "BeWell - a tool for improved mental health" (WordDiagnostics; 900 000 SEK; 2020-03491).
- 2019 Funding from The Swedish Research Council for a three-year international postdoc project entitled "Analysing Self-reported and Behavioural Text Data with Artificial Intelligence Can Improve the Assessment of Psychological Constructs" (3 100 000 SEK; 2019-06305).
- 2019 Funding from FORMAS for project entitled "Transition Visions: Coupling Society, Well-being and Energy Systems for Transitioning to a Fossil-free Society (TransVision)" (4 316 667 SEK; 2019-01969).
- 2019 Funding from FORMAS for project entitled "Agents of Change: Mind, Cognitive Bias and Decision-Making in a Context of Social and Climate Change (CCChange)" (1 876 271 SEK; 2019-00390).
- 2019 Funding from VINNOVA for project entitled "Förbättrad diagnostik av psykisk ohälsa med smartphonesensor data och text som analyseras med AI" (WordDiagnostics; 300 000 SEK; 2019-04036).
- 2018 Funding from VINNOVA for project entitled "Improving the Diagnostic Accuracy of Psychiatric Disorders using Artificial Intelligence Based on Text Data" (WordDiagnostics; 3 294 000 SEK; 2018-02007).
- 2018 Venture Cup's most prestigious national award *Start-up of the year 2018* (100 000 SEK) and their local award *Game changer* (50 000 SEK) with WordDiagnostics.
- 2018 Lund University and Sparbanken Skåne's Award for Future Innovations, First price (75 000 SEK).
- 2015 Helge Ax:son Johnsons Stiftelse, received 12 000 SEK for research.

Area of Research

Psychometrics; Applications of Artificial Intelligence including Natural language processing and Machine learning in psychological research; Conceptualizing and measuring well-being; Cognitive well-being - Harmony, Satisfaction, Happiness and Meaning in life; Sustainable Well-Being - Social and environmental consequences of pursuing well-being.

Research Tools

text R-package to analyse natural language data;

DLATK: Differential language analysis toolkit to analyse word content;

R for statistics;

JsPsych, a JavaScript library for creating online experiments;

Limesurvey, a free and open source software based on HTML and PHP to collect survey data.

Open Science Framework, to preregister studies and upload datasets;

Peer Reviewing or Editorial Contributions for Journals

Current Opinion in Behavioral Sciences; Journal of Happiness Studies; Social Indicator Research; Sustainability Science; Frontiers of Psychology; Current Psychology; Environmental Communication; Scandinavian Journal of Psychology; Review of General Psychology, Information, Sensors.