Sven Panis | Experimental Psychologist

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Professional profile

„*There are no secrets that time does not reveal*" – *Jean Racine*

Scholar intrinsically interested in temporal dynamics of behavior, and cognitive and neural processes. Published a method for mental chronometry and cognitive psychophysiology to link behavior and physiology through their common ground: the passage of time, on various scales (milliseconds, seconds, minutes, hours, etc.). In favor of open access, data, and analysis code. After applying event history analysis to behavioral data for 10 years, I now want to extend the application of event history analysis to testing of computational models of cognition and cognitive neuroscience.

Core skills and interests

- Event history analysis a.k.a. hazard, survival, transition, failure-time analysis
- Experimental design of RT studies and reproducible workflow
- Data analysis with R & Analysis reporting using R Markdown and Quarto
- Selection processes, cognitive control, response inhibition, object recognition
- Dynamic field theory
- fmri, eye-tracking, EMG, ViSaGe
- Matlab, PsychToolbox, E-Prime, Presentation, SPM, freesurfer, COSIVINA, SAS, Statistica, SPSS

Career summary

08-01-2024 – today	Postdoctoral researcher at ETH Zürich, Switzerland
01-07-2022 – 14-02-2024	Part-time Lecturer, University of Kaiserslautern, Germany
01-07-2019 – 30-06-2022	**PI on DFG research grant**, Deutsche Forschungsgemeinschaft, PA 2947/1-1 Topic: *Characterizing the within-trial time course of attentional facilitation and inhibition across paradigms and effectors*
01-03-2014 – 30-06-2019	Scientific fellow worker University of Kaiserslautern, Germany
01-10-2012 – 28-02-2014	Voluntary fellow worker KU Leuven
01-10-2009 – 30-09-2012	**PI on FWO-Flanders research grant**, Fonds Wetenschappelijk Onderzoek – Vlaanderen, 1.2.472.10.N.00 Topic: *Surviving selective temporal probing: A combined psychophysical/analytical method*
07-10-2007 – 30-09-2009	Scientific fellow worker KU Leuven
01-06-2006 – 06-10-2007	Voluntary fellow worker KU Leuven (finishing PhD)
22-10-2005 – 31-05-2006	Scientific fellow worker KU Leuven
22-10-2001 – 21-10-2005	Doctoraatsbursaal KU Leuven

Teaching

- *Psychophysics and Signal Detection Theory*
  Cognitive Science Master Seminar 2014 – 2019
- *Data analysis with R and SPSS*
  Cognitive Science Master Seminar 2014 – 2019
- *Perception & Action: Dynamic Field Theory*
  Cognitive Science Master Seminar 2017 – 2019
- *statistics for Bachelor Psychology students*
  tutoring 2006 – 2013

Administrative responsibilities

- Program coordinator for the Master in Cognitive Science at TUK, Germany: 2014-2019
- Member of the Examination Committee for the Master in Cognitive Science at TUK, Germany: 2014-2019

Research-related activities

- 5-day course on *Event History Analysis* (by Paul Allison), in Philadelphia, USA
- 2-week summer school on *Dynamic Field Theory* in Norwich, England (http://www.dynamicfieldtheory.org/#/what-is-dft/)
- Eighth annual *JAGS and WinBUGS workshop*: Bayesian modeling for cognitive science, Amsterdam, the Netherlands
- 4-week course on Python by Alfatraining in Kaiserslautern (Februari, 2023)
- 4-week course on SQL by Alfatraining in Kaiserslautern (March, 2023)
- 4-week course on Machine Learning by Alfatraining in Kaiserslautern (April, 2023)
- Model-based neuroscience and cognition summer school in Amsterdam (July-August, 2024)

Supervision of students

- *Phd students*
  Katrien Torfs (defended succesfully on 10.9.2012)

- *Master students*
  Dries Froyen, Joris Vangeneugden, Elisabeth Bartlema, Lina Zolotarova, Omar Jubran, Eva Matheis

- *Bachelor students*
  Christina Arnold, Helena Wortmann, Theresa Willenbücher, Akin Akgül, Yvonne Weiß, David Poth, Nikolai Staub, Jennifer Bender, Moritz Matthias Lang, Niklas Conrad, Felix Bachmann, Lisa Sarah Henn, Lasse Nestriepke

Reviewer activities

- *Journals*
  Acta Psychologica, Journal of Cognitive Neuroscience, Journal of Vision, NeuroImage, Perception, PLoS ONE, Psychonomic Bulletin & Review, Visual Cognition, Journal of Cognitive Psychology, Experimental Psychology

- *Research foundations*
  Austrian Science Fund (FWF)

Education

- **Doctorate in Psychology**
  University KULeuven, Leuven, Belgium
  Graduation date: 9 January 2008
  Subject: Visual perception
  Title: *Processing of contour information in shape perception and object recognition: Explorations of mid- and high-level representations*

- **Master in Psychology**
  University KULeuven, Leuven, Belgium
  Graduation date: 11 September 2001
  Subject: Experimental Psychology
  Title: *Identification of everyday objects on the basis of fragmented object outlines*

References

- Prof. Dr. Thomas Schmidt – thomas.schmidt@sowi.uni-kl.de
- Prof. Dr. Johan Wagemans – johan.wagemans@kuleuven.be
- Prof. Dr. Frouke Hermens – frouke.hermens@ou.nl

Invited talks

18-05-2021 Colloquium Cognitive Science in Trier, Germany.
Title: *Behavioral dynamics reveals multicausality and nesting of timescales: Temporally tracking Stroop interference and conflict adaptation*

19-05-2017 Colloquium Experimental Psychology in Göttingen, Germany.
Title: *How to analyze time-to-event data such as response times? Examples from masked priming, spatial cueing, and the Egly paradigm*

16-05-2014 Colloquium Experimental Psychology in Göttingen, Germany.
Title: *Disentangling the spatio-temporal interplay between cognitive component processes: Applications of event history analysis in cognitive (neuro)science*

Publications

Clinical experimental psychology

Burnett, H. G., **Panis, S.**, Wagemans, J., & Jellema, T. (2015). Impaired identification of impoverished animate but not inanimate objects in adults with high-functioning autism spectrum disorder. *Autism Research, 8*(1), 52-60.

Evers, K., **Panis, S.**, Torfs, K., Steyaert, J., Noens, I., & Wagemans, J. (2014). Distributed interplay between mid- and high-level vision in ASD? Evidence from a contour identification task with everyday objects. *Journal of Autism and Developmental Disorders, 44*, 801-815.

Panis, S., Torfs, K., Gillebert, C. R., Wagemans, J., & Humphreys, G. W. (2017). Neuropsychological evidence for the temporal dynamics of category-specific naming. *Visual Cognition, 25*(1-3), 79-99.

Experimental psychology

Panis, S. (2020). How can we learn what attention is? Response gating via multiple direct routes kept in check by inhibitory control processes. *Open Psychology, 2*, 238-279. https://doi.org/10.1515/psych-2020-0107

Panis, S., De Winter, J., Vandekerckhove, J., & Wagemans, J. (2008). Identification of everyday objects on the basis of fragmented versions of outlines. *Perception, 37* (2), 271-289.

Panis, S., & Hermens, F. (2014). The time course of spatial contextual interference: Event history analyses of simultaneous masking by nonoverlapping patterns. *Journal of Experimental Psychology: Human Perception and Performance, 40*(1), 129-144. doi: 10.1037/a0032949

Panis, S., Moran, R., Wolkersdorfer, M. P., & Schmidt, T. (2020). Studying the dynamics of visual search behavior using RT hazard and micro-level speed-accuracy tradeoff functions: A role for recurrent object recognition and cognitive control processes. *Attention, Perception, & Psychophysics, 82*, 689-714. https://doi.org/10.3758/s13414-019-01897-z

Panis, S., & Ramsey, R. (July, 2025). Event History Analysis for psychological time-to-event data: A tutorial in R with examples in Bayesian and frequentist workflows. PsyArXiv Preprint, https://osf.io/preprints/psyarxiv/57bh6_v2

Panis, S., & Schmidt, T. (2016). What is shaping RT and accuracy distributions? Active and selective response inhibition causes the negative compatibility effect. *Journal of Cognitive Neuroscience, 28*(11), 1651-1671. doi: 10.1162/jocn_a_00998

Panis, S., & Schmidt, T. (2020, May 25). What is causing "inhibition of return" in spatial cueing tasks? Temporally disentangling multiple cue-triggered effects on multiple time scales using response history and conditional accuracy analyses. https://doi.org/10.31234/osf.io/udpvs

Panis, S., & Schmidt, T. (2022). When does "inhibition of return" occur in spatial cueing tasks? Temporally disentangling multiple cue-triggered effects using response history and conditional accuracy analyses. *Open Psychology, 4*, 84-114. https://doi.org/10.1515/psych-2022-0005

Panis, S., Schmidt, F., Wolkersdorfer, M. P., & Schmidt, T. (2020). Analyzing response times and other types of time-to-event data using event history analysis: A tool for mental chronometry and cognitive psychophysiology. *i-Perception*. November 2020. doi:10.1177/2041669520978673

Panis, S., Vangeneugden, J., & Wagemans, J. (2008). Similarity, typicality, and category-level matching of morphed outlines of everyday objects. *Perception, 37* (12), 1822-1849.

Panis, S., & Wagemans, J. (2009). Time-course contingencies in perceptual organization and identification of fragmented object outlines. *Journal of Experimental Psychology: Human Perception and Performance, 35* (3), 661-687.

Sassi, M., Vancleef, K., Machilsen, B., **Panis, S.**, & Wagemans, J. (2010). Identification of everyday objects on the basis of Gaborized outline versions. *i-Perception, 1*(3), 121-142.

Schmidt, T., **Panis, S.**, Wolkersdorfer, M. P., & Vorberg, D. (2022). Response inhibition in the negative compatibility effect in the absence of inhibitory stimulus features. *Open Psychology, 4*(1), 219-230.

Torfs, K., **Panis, S.**, & Wagemans, J. (2010). Identification of fragmented object outlines: A dynamic interplay between different component processes. *Visual Cognition, 18*(8), 1133-1164.

Vandekerckhove, J., **Panis, S.**, & Wagemans, J. (2007). The concavity effect is a compound of local and global effects. *Perception & Psychophysics, 69*(7), 1253-1260.

Wolkersdorfer, M. P., **Panis, S**., & Schmidt, T. (2020). Temporal dynamics of sequential motor activation in a dual-prime paradigm: Insights from conditional accuracy and hazard functions. *Attention, Perception, & Psychophysics, 82*, 2581-2602. https://doi.org/10.3758/s13414-020-02010-5

fMRI

Gillebert, C. R., Op de Beeck, H., **Panis, S.**, & Wagemans, J. (2009). Subordinate categorization enhances the neural selectivity in human object-selective cortex for fine shape differences. *Journal of cognitive Neuroscience, 21*, 1054-1064.

Panis, S., Vangeneugden, J., Op de Beeck, H., & Wagemans, J. (2008). The representation of subordinate shape similarity in human occipitotemporal cortex. *Journal of Vision, 8*(10), 1-15.

Panis, S., Wagemans, J., & Op de Beeck, H. (2011). Dynamic norm-based encoding for unfamiliar shapes in human visual cortex. *Journal of Cognitive Neuroscience, 23*(7), 1829-1843. https://doi.org/10.1162/jocn.2010.21559

Eye-tracking

Germeys, F., De Graef, P., **Panis, S.**, Van Eccelpoel, C., & Verfaillie, K. (2004). Transsaccadic integration of bystander locations. *Visual Cognition, 11*(2-3), 203-234.

Human factors

Muramalla, S., Tarawneh, R. A., Humayoun, S. R., Moses, R., **Panis, S.**, & Ebert, A. (2017). Radial vs. rectangular: Evaluating visualization layout impact on user task performance of hierarchical data. *IADIS International Journal on Computer Science & Information Systems, 12*(2), 17-31.